California State Journal of Medicine.

Owned and Published Monthly by the

Medical Society of the State of California

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Secretary State Society, - - | Butler Building,
State Journal, - - - | San Francisco.
Official Register, - - -

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VOL. IX OCTOBER, 1911. No. 10

EDITORIAL NOTES.

VARIOLA AND VARICELLA IN SAN FRANCISCO.

According to a recent publication of the United States Public Health and Marine Hospital Service, smallpox is and has been for the past few years quite prevalent throughout the United States. While the disease is of a mild type, and the mortality with few exceptions low, still it behooves us in California in general, and San Francisco in particular, to be constantly on our guard, and to in every way co-operate with the local and state Boards of Health in their endeavors to eradicate the disease.

During the year 1909 over 24,000 cases were reported in the United States, with a mortality ranging from .10% to .50% in most localities up to as high as 20% in Norfolk, Va., and even higher in a small epidemic in South Carolina. The figures for the state of California are incomplete, but the records of the San Francisco Isolation Hospital show that since 1900 an annual average of 124 cases have been treated, with a mortality of less than one-quarter of one per cent. for the past four years.

The reasons for calling attention at this time to a disease which seems for the time being at least to have lost its virulence are as follows: It is recognized that the severity of certain acute infectious diseases varies from year to year, running as it were in cycles. While at the present time we are experiencing an epidemic of smallpox accompanied by a phenomenally low death rate, there is no reason why this may not at any time be greatly increased and the disease return to its former severity. Again, the last state legislature enacted a law making vaccination of school children no longer compulsory, a measure which may have appeared at the time expedient for political or other reasons, but which can have but one ultimate effect on the resistance of many of the coming generation. Finally, varicella is always present in the community and, with its frequently striking resemblance to variola and the difficulty at times of differentiating between the two, except by one of special training, mistakes are liable to and do occur not infrequently.

San Francisco physicians should report immediately to the city Board of Health all cases of varicella coming under their notice. This is necessary both to guard against the possibility of it being a mild case of variola, and, of almost as great importance, so that it and all contacts may be excluded from the public schools. As chicken-pox in itself is considered of so little importance, many of our local medical men have not been as careful as they should be in reporting the disease. As a result, much valuable time is annually lost to school children through acquiring the disease in the school room. In this connection it might be well to state that physicians occasionally do not report chicken-pox out of deference to the wishes of the parents, and the fear on their part that the house may be placarded, quarantined or disinfected. None of these things are done; the case is seen once by a diagnostician of the Board of Health; the patient and all contacts excluded from school for a period of three weeks from the onset of the rash, and the parents instructed to keep their children apart from those of their neighbors.

The very thorough system of school and other inspection perfected by the Board of Health is daily bringing to light cases of neglect on the part of the family physician. As an example of this, within the past two weeks it has been necessary to in one day exclude the children of fourteen families from school, each case being directly traceable to class room contact with such a case which had been seen but not reported by a physician. Such negligence, though, is becoming more and more the exception.

L. D. M.

JONNESCO AND SPINAL ANESTHESIA.

When Bier in 1899 published his new method of anesthesia by the sub-arachnoid injection of cocain, it immediately took the fancy of the profession, appealing to them with the force of the long awaited at last discovered safe substitute for the dangerous general anesthetics, chloroform and ether. In spite of the warn-

ing of Bier to go slow and be careful, the new method spread over the world with a wave of enthusiasm. Then the inevitable reaction set in, for the cocain was too toxic and the spinal method gave a far higher mortality than chloroform. Then began the search for substitutes, and in rapid succession were tried A eucain, B eucain, novocain, tropacocain, alypin, stovain. Of these, only tropacocain and stovain have survived, the former being preferred by Bier on account of its greater safety, the latter by many other operators on account of its deeper anesthetizing and greater muscle relaxing power. In fact, it is this very power of paralyzing the motor nerves that constitutes its greatest virtue and at the same time its greatest danger, giving perfect relaxation of sphincter in anal operations, so that dilatation is unnecessary, likewise relaxing the abdominal muscles for laparotomies and the muscles of the lower limbs for adjustment of fracture, etc., but unfortunately also liable to give us a paralysis of the phrenic nerve if the patient's head is incautiously lowered. It is this potential danger that causes the fear of this drug in many minds. The introduction of these two drugs saved spinal anesthesia from oblivion, and with the perfection of technic the method was finding its level as one of the several methods of anesthesia to be applied in appropriate and selected cases, when suddenly Jonnesco burst on the scene like a hurricane, and, after a whirlwind campaign, chiefly in the newspapers, departed for the land of his birth, leaving behind him a path of desolation for the future of spinal anesthesia. He claimed to have revolutionized sp. stovanization and to have robbed it of all its dangers by the simple addition of strychnin, so that he not only injected into the lumbar spine but even into the high dorsal spine with perfect impunity to the patient, getting perfect anesthesias all the time and absolutely no evil results; nay, that for the past two years he has not used a general anesthetic at all. Although his claims seemed preposterous and more like the vauntings of a charlatan than a man of science, still he was given a fair hearing and an opportunity to demonstrate his method. What was the result? In this country, "of seven high spinal analgesias four resulted unfavorably, one patient being constantly delirious on the table and afterward at intervals for twelve hours, also requiring 12 min. artificial respiration to restore this function after a 12-min. operation (osteoma of forehead). Second case, superficial chest operation, no anesthesia, required chloroform. Third case, did not succeed in drawing off spinal fluid, ether given. Fourth case, amputation of breast, patient nearly died, later ether had to be given. Furthermore, one death and one partial paralysis in Philadelphia following method by imitators of Jonnesco." (John J. Moorehead, Journal A. M. A., January 22, 1910.) And this by the man who later claimed before the French Surgical Congress in Paris, October 3, 1910, that he had personally given 1005 injections, of which 238 were high punctures, and had had no deaths or even severe accompanying symptoms. In the discussion, adverse criticism of his methods did not seem to diminish Jonnesco's enthusiasm in the least. The affair seems to have taken the same course in England as in the United States. In the British Medical Journal, April 2, 1910, G. A. H. Barton writes, under Dangers of Spinal Anesthesia, 'Voyez comme il sourit en regardant ses intestins.' This was the burden of Professor Jonnesco's song at the Royal Society of Medicine, and beyond photographs depicting this happy state of affairs and his own assurance that this method was perfectly safe, he presented no convincing evidence that it was in any way superior either to general anesthesia or to the method evolved in this country by Mr. Barker. (Stovain in 5% glucose solution.—A. N.) However, in spite of this, and in spite of the indifferent results he obtained at the Seamen's Hospital (only one completely satisfactory anesthesia in three cases) the method was acclaimed by a section of the profession and eulogized by the lay press, the public being beguiled into a belief of its absolute safety. . . . And now we find the patient does not always regard his intestines with a smile. All honor to Messrs. Milward and Gabbett for publishing their fatalities, etc." The two fatalities referred to were published, one by Milward in British Medical Journal, March 26, 1910; the other by Gabbett, British Medical Journal, March 29, 1910. The latter writes: "In the British Medical Journal for November 13, 1909, I read the following statement by Professor Jonnesco: 'General spinal anesthesia is absolutely safe, it has never caused death nor any important complications.' He then proceeds to report a death under novocain-strychnin anesthesia during operation for elephantiasis scroti. Puncture was between twelfth dorsal and first lumbar vertebrae. He thinks the strychnin caused death, as there was spasm of the arms and chest before exitus. Had used novocain alone in many cases previously without accident. Milward's case was one of bowel obstruction in which he used stovain and strychnin, patient showing alarming symptoms in six minutes and dying in twelve minutes. Autopsy showed lungs clear of vomited material. Before coming to England Jonnesco had brought his method up before the German Surgical Society in Berlin, when 'Bier declared that the method must be rejected, and Rehn of Frankfort stated that animal experiments showed considerable danger in injections above the lumbar region. In explanation of this hostility Jonnesco says that as he expected the method would be considered too novel and too hard to be accepted without opposition, predicting, however, that in a short time his method of general spinal anesthesia would be generally accepted.'" (Moorhead.)

Now, what shall we think of a man who in the face of these facts persists in declaring and advertising—no patent medicine exploiter ever made more clever use of the lay press than Jonnesco did—his method of general spinal anesthesia as free from all danger whatsoever? Does he deliberately deceive, or is he a fanatic who cannot see any wrong in his method? Let us charitably consider him a blind fanatic, who may have meant well but whose advent has done more to damage the cause of spinal anesthesia than any event that heretofore has happened.

A. N.

THE EXCEPTIONAL CHILD.

In another part of this JOURNAL we publish the very excellent set of record blanks devised by Dr. Grossmann for investigating the physical and mental potentialities of children. Dr. Grossmann in an address to the San Francisco County Medical Society made evident the great importance of a better understanding of child development, and claimed that 25% of our children depart from the normal. The figure may at first sight appear excessive, but a little consideration will show that the progress of the race under present conditions, at the existing rate of change, must inevitably be accompanied by increasing abnormality in the young. It is to be remembered that it is a salutary biological law that animals or plants subjected to rapid and profound change of environment, respond by increased variation in the offspring. Notwithstanding the doctrine of the fixity of the germ plasm that now holds sway, the fact must be allowed that the racial intermixture following facility of travel, the profound changes in the relation of physical to mental work, and the many nutritional changes that accompany the increasing substitution of urban for rural life, cannot be without indirect influence on the germ cells, resulting in increased variation. In fact, such variation is a prerequisite for progress. Without variants permitting of higher cultivation, whose capacities can be transmitted, we could have little hope of increasing or even maintaining the present advance. The fundamental importance of this fact is little appreciated by the profession and not at all by the public. Civilization means variation, but variation occurs in all directions. Some of the variants, probably the smaller number, possess an increased potentiality—they have the capacity to do more or better than their forebears. Others are reversions to a more primitive type. The greater number are neither atavistic nor progressive, but simply unbalanced, exhibiting plus and minus capacities in the same individual. If we were applying the nomenclature of pathology to these groups, we might designate them as hyper-hypo and para-potential. As Dr. Grossmann well pointed out, to the legislator and most educators all these variant children are thought of and generally treated as alike. To our fathers they were simply unusual children, to be duly licked back to the normal. While to-day the stick has disappeared, the purpose has remained unchanged, we still strive to shape them back to the average. But obviously such effort is either futile or wrong. The hypo-potential are hopeless and a danger to the race—a more enlightened age will deal with them in ways that it is useless to discuss at present. The hyper-potential should be society's darlings, for with them lies the future. At present a few ultimately so become, the majority never realize or have a chance of realizing their potentialities. The para-potential are a mighty problem. Contributing a very serious proportion of the growing population, with capacities unevenly distributed, they are the source of the sentimental criminal, the clever fool and the whole realm of paradoxical humanity. To make these one-sided, unbalanced children fit, as men and women, into the framework of society, so that they and their environment both benefit, is of social problems one of the most important. Let us remember that it is from the activities of this class that most of the discords of social life arise. In family life, as in social activities, it is the unbalanced mind that breeds unhappiness and strife. The greatest educational problem of to-day is to devise means of recognizing the abnormal in the growing child, and then so train him that the variant qualities having social value be developed and harmful qualities brought within control. In the attainment of this ideal to which Dr. Grossmann has so long and earnestly worked the first step is a correct diagnosis of the individual child. Believing that the tables drawn up by Dr. Grossmann are a valuable aid to such diagnosis, we have reprinted them for the benefit of our readers.

H. D'ARCY POWER.

DISINFECTION OF THE SKIN.

In the performance of our ordinary surgical operations the possible sources of contamination are the hands of the surgeon, the materials used (instruments, ligatures and sutures, dressings, etc.) and the skin of the patient. By the employment of reasonable care, rubber gloves, gowns and masks, and the usual methods in vogue for the sterilization of our instruments, ligatures and dressings, the surgeon and his materials are rendered reasonably safe. The skin of the patient alone remains.

The carbolic spray of Lister and the solution of the same substance rapidly gave way to bichlorid of mercury, at whose shrine we have worshiped for the past two decades, knowing, however, that it did not fulfil the conditions required: inhibition of bacterial growth, penetration into the skin, harmlessness to the patient.

In 1908 Grossisch (Zentralblatt f. Chir. 1908, No. 44, p. 1289) announced that simple painting of the skin with tincture of iodin *without previous preparation whatsoever* fulfilled all our conditions. His method was rapidly adopted for trial with almost universal approbation. Numerous cases, however, were reported of severe eczemas, especially in patients upon which closed dressings such as plaster of Paris casts were used. It was found that this objection could be obviated by the use of freshly prepared tincture of iodin, as in the older preparations there is present hydriodic acid, a substance extremely irritating to the skin; and at the conclusion of the operation washing the superfluous tincture of iodin away with alcohol or thiosulphate of soda.

Numerous experiments, which have been carefully reviewed by Lenormant (Presse Medicale 1911, No. 38, p. 391), seem to indicate fairly con-

clusively that the iodin penetrates the epidermis and is found in the superficial layers of the derma, this penetration being much less marked when the skin has been previously moistened by the application of water. Seelig and Gould (Surg. Gyn. & Obstet. 1911, vol. 12, p. 262), in a most ingeniously devised series of experiments, using a flap of living skin of the rabbit's abdomen, confirm the opinion of Grossisch. They were able to show that the tincture of iodin penetrates more rapidly than alcohol in direct proportion to the iodin content, and that the higher strength alcohols were more efficient than those of lower strength.

All experimenters agree that the iodin exerts but an inhibitive action upon bacterial life, cultures invariably being positive after the removal of the iodin with thiosulphate of soda.

In the Congress of the German Surgical Society of this year (Zentralblatt f. Chir. 1911, No. 29, supp. p. 1, et seq.) Küttner, who interviewed 187 surgeons, reports that those using the method without previous preparation of the patient, are universally in favor of the method. Of 113 operators who used tincture of iodin after first scrubbing the patient with other substances, 78% report cases of eczema; of 74 operators who used tincture of iodin with no previous preparation of the patient, but 8% complained of having had cases of eczema. Küttner sums up the advantages of the method as follows: The procedure is (1) without special preparation available even under unfavorable external conditions, (2) can be carried on in a few seconds, (3) is effective in a few minutes, (4) can be used in every variety of wound and operation, (5) its efficiency is absolutely sure, (6) the technic is so simple that even unschooled and but superficially instructed personnel may be trusted to carry it out, (7) it is humane. He further states that in his opinion it is the only method of disinfection of the operative field.

The technic is as follows: if the patient be in hospital the evening before the operation he may have a full bath without special attention being paid to the operative field. The field is shaved (soap and water) but no local dressings are applied. On the day of the operation, after narcosis has been commenced, the field of operation is painted with freshly prepared 5% tincture of iodin (half strength U. S. P. is effective). Immediately before the beginning of the operation the field is again painted with the same solution. For emergency operations dry shaving, painting of the field with 5% tincture of iodin, *without any sort of previous preparation.*

Although nearly all observers are lavish in their praises of the method, here and there we meet with the opinion of men perfectly competent to judge in these matters who believe they have proved the method to be totally inefficient. Tinker and Prince (Surg. Gyn. & Obstet. 1911, vol. 12, p. 530) detail a series of experiments upon human skin infected with bacillus subtilis in which the tincture of iodin according to the method of Grossisch was inert.

Although, no doubt, good results are obtained by any of the current methods now in vogue, the Grossisch technic is the method par excellence for the field, the mine and the lumber camp, and bids fair to replace the long and tedious methods heretofore employed, their efficiency being proportioned to the care with which they are carried out.

S. H.

OPHTHALMOSCOPY IN MEDICINE.

Medicine is making great strides and every year finds new methods of diagnostic precision. It is becoming imperative and more necessary for the general practitioner to have a reasonable working knowledge of these newer methods and to be conversant with the instruments. While he cannot hope to become expert in the use of those procedures used only in a limited number of cases he should perfect himself in utilizing appliances that will be found helpful daily.

It is now sixty years since Helmholz invented the ophthalmoscope and what a small minority of medical men can examine the ocular fundus. Its use is practically confined to a few diagnosticians, neurologists and men specializing in ophthalmology. This positively spells of medievalism and is no credit to the profession. Think of it gentlemen, sixty years since a most useful and very inexpensive instrument has been perfected and but a minority of you make use of it.

Within the past decade the electric ophthalmoscope has been made practicable, so much so, that one can learn to see the fundus with little practice and carefully study the interior of the eyeball. Nowhere else in the system can one see blood coursing through the vessels, both arteries and veins, examine their coats and have under inspection a nerve trunk coming directly from the cranium, a piece of the brain, as it were, pushed under your eye.

A five per cent. solution of euphthalmine instilled once or twice into the eye will cause a dilation of the pupil, furthering the ease of examination, without the fear of raising the tension and causing glaucoma.

Other mydriatics should not be used before the fundus has been examined as they raise tension and occasionally may be followed by an attack of acute glaucoma.

Numerous diseases of the central nervous system produce changes within the eye and often a beginning optic nerve atrophy is the first sign of incipient spinal sclerosis. The circulatory system also shows here with hyperaemias, anaemias, hemorrhages and changes within the walls of the vessels, etc. Diabetes and nephritis are often first suspected after using the ophthalmoscope.

Syphilis, either when inherited or acquired at times manifests itself here as does miliary tuberculosis.

To epitomize: The ophthalmoscope is now a handy, inexpensive, simple and useful instrument which should be used as a measure of routine examination in internal medicine and the general practitioner has not fully protected his patient if not utilizing this simple and useful aid in diagnosis.

W. S. F.

ORIGINAL ARTICLES

ABNORMAL BODY TEMPERATURES IN INJURIES OF THE CERVICAL SPINAL CORD.*

By RAY LYMAN WILBUR, M. D., San Francisco.

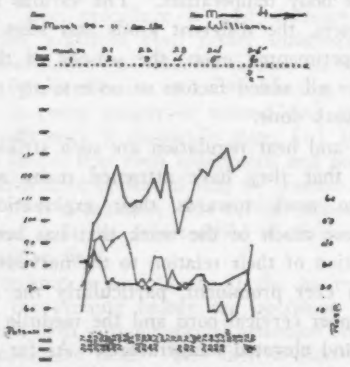
The essential clinical features of the case which gave rise to this paper were a sudden, complete and unvarying paralysis and anaesthesia of all parts of the body supplied from below the level of the 4th cervical cord segment, diaphragmatic respiration, absence of the sphincter and all other body and limb reflexes except the plantar, which was at times exaggerated, transient priapism, and high temperature with slow pulse rate, all the result of a fracture dislocation in the cervical region (see paper of Dr. T. M. Williams, Journal A. M. A., July 22, 1911, p. 283, for full case report). In other words, by an unfortunate accident, there was duplicated upon a healthy young man the conditions brought about upon large dogs by Naunyn and Quincke[1] in their study of the effects of crushing injuries of the cervical cord upon variations in body temperature. The bedside record (see illustration) shows that subsequent to an initial subnormal temperature there developed a well marked hyperpyrexia which was apparently independent of external temperature, marked vasomotor disturbance, sweating, ingestion of food, and infection; was not accompanied by an increased heart rate, but was associated with rapid diaphragmatic pulmonary ventilation. Here there are presented a series of interesting physiological and clinical problems. What has suddenly destroyed that fine balance of chemical and mechanical factors concerned in the maintenance of a uniform body temperature? Is the subnormal temperature due to decreased heat production or to increased heat loss? Is the hyperpyrexia from increased heat production or diminished heat loss? If more heat is produced, can it come from the flaccid muscles or is it from the liver and alimentary tract? Is it possible that there are trophic or heat nerves associated with the muscles independent of the motor nerves? Is there an inhibitory heat center in the cervical cord or are there inhibitory fibres passing through it that are destroyed by such a lesion? Is this hyperpyrexia to be distinguished from fever due to infection? Is the whole effect produced merely that resulting from vasomotor disturbance? Clinically it is important to answer these questions. Does the occurrence of persistent subnormal or high temperature after a cord injury mean a complete transverse lesion? Can one differentiate by physical or other findings such a variation in temperature from one due to infection? Do such cases throw any light on the possibility of the occurrence of purely nervous or hysterical fevers?

Before attempting to answer some of the questions by a brief review of the great and conflicting experimental and clinical literature it might be well to call to mind that heat is produced largely by the muscles, heart, glands, intestine and liver, that according to Vierordt it is lost by warming the urine and feces (1.8%), and the expired air (3.5%), by evaporation from the lungs (7.2%) and from the skin (14.5%) and by radiation and conduction (73%) and that its regulation depends upon a careful balance of the heat produced and that lost and that the vasomotor mechanism plays an important and evident part in this control. It is also important to remember in interpreting the results of animal experimentation that the larger an animal is the greater the ratio of its volume to its surface so that a small animal has greater surface in relation to its volume, and must have proportionally more rapid metabolism and more food to keep up the same body temperature. The various types of calorimeters, the different kinds and sizes of animals experimented upon, the seasons of the year, etc., have all added factors of uncertainty to much of the work done.

Fever and heat regulation are such striking phenomena that they have attracted many scientific minds to work towards their explanation, and throughout much of the work that has been done the question of their relation to the nervous system has been ever prominent, particularly the relation of the upper cervical cord and the medulla to subnormal and elevated temperatures. As far back as 1836 Brodie[2] reported a clinical case of a crush of the cord at the level of the 5th and 6th cervical vertebrae, in which there was slow and irregular diaphragmatic breathing, weak pulse, livid countenance and prompt death with a previous temperature of 111° F. Previously in 1812[3] he had studied the effect of urare, which paralyzes the muscle end-plates, upon temperature and the respiratory exchange, and found that less heat was generated by animals poisoned with it. In discussing his clinical case he refers to Chossat's investigations (1822) showing that division of the superior portion of the spinal cord produced remarkable elevations of animal heat. Bernard, Schiff, Bezold, Tscheschichin and others, after many experiments, largely on rabbits, obtained somewhat varying results, but in general, a fall of temperature. Naunyn and Quincke in 1869, following the idea of

* Read before California Academy of Medicine, April, 1911.

Tscheschichin who had prevented fall of temperature for a long time by keeping the animals warm after cord severance, experimented upon large dogs by crushing the cervical cord, endeavoring to produce conditions similar to clinical ones, and found that if they kept the dogs warm or in a closed chamber they usually developed high temperatures. The same result was obtained at times with simple section of the cord if made high up. These experiments were made late in the summer. Some made in winter with exposure of the animals to ordinary temperatures resulted in subnormal or normal temperatures. They considered the early fall in body temperature as due to paralysis of the vasomotors with consequent marked heat loss. This view coincides with that of Janssen.[4] The clinical cases reported by Billroth, Simon and Frerichs, in all of which high temperatures followed cervical cord injury, were thought by them to have been influenced by the fact that these accidents all occurred in the summer. In dogs a partial severance of the cord caused only slight or no elevation, and in one experiment after such a result a complete severance brought about the usual high temperature. That the lessened respiratory movements did not lead to the heat retention they were able to prove upon a dog in which they artificially interfered with respiration and yet the dog showed a lowered temperature. Their conclusion was that heat production



is increased in injuries of the 5th C. V. and they thought that instead of a hypothetical heat center in this region that fibres were severed which control oxidative processes in the body and so modify the heat production of the organs. They noted greater changes from cervical injuries than those lower down. There was an increase in heat production and in heat loss and the result obtained depended upon which factor outweighed the other. In other words after a cord lesion of the type described heat regulation ceased to exist and the body temperature became subject to various internal and external conditions.

Fischer [5] working about the same time with section of the cord at various levels concluded, after getting usually some elevation in the temperature of the dogs and rabbits with cervical section, that there was an inhibitory heat center in the cervical cord.

Binz [6] in 1870 working upon dogs with a temperature already reduced by chloroform and morphin obtained similar and even more striking results.

Rosenthal, Riegel and Parinaud obtained different results by working with rabbits and in general found that below a certain external temperature animals with severed cords did not show a rise, in fact below about 90° F., a continuous loss in body temperature. To overcome the objection to Naunyn and Quincke's work that they kept injured dogs in a closed chamber, where because of their natural inability to sweat and necessary use of the tongue and respiration to cool themselves speedy water saturation of the enclosed air took place with consequent absence of cooling evaporation, the work of Parinaud [7] was done in the open air in the summer time in Paris. He also measured the temperature of various parts of the body, an essential thing in a condition associated with a marked fall of blood pressure and probable uneven distribution of the blood. The variable results of these experiments are analogous with the variable clinical findings but nevertheless they make it perfectly clear that cervical cord severance has a marked effect on heat regulation. Wood [8] in his well known treatise on fever showed that with the fall in blood pressure associated with cord severance a marked dissipation of heat occurred if severance was above the splanchnics. Pflüger [9] showed that metabolism was reduced one-half by cutting the cord at 5 to 6 c. v. as measured by relation of O absorbed to CO_2 given off. The use of curare by Zuntz,[10] Julyet and Regnard had a similar effect and Pflüger,[11] who carefully worked out this point, found about one-third reduction in the oxygen absorbed and the CO_2 given off due to its use. Zuntz [12] also found that if curanized rabbits were kept at a constant temperature in a bath, the respiratory exchange remained constant and it was impossible to induce the prompt septic fevers that occurred in uncurarized rabbits upon injection of septic material. Various investigators, among them Gildermeister, had shown that increased CO_2 was given off by intact animals in a cold bath due to nervous reflexes stimulating metabolism. Heidenhain believed that all of these temperature effects were due to vasomotor changes and that their regulation was a function of the vasomotor system, but the experiments upon various sections of the brain, heat puncture of Aronsohn and others, etc., all show that the nervous system has, besides its vasomotor function, a heat producing one and also probably exerts, at least through inhibitory centers, a definite influence upon heat regulation. Tscheschichin, Eulenberg and Landois, and Wood and Ott all describe a rise in temperature following section of the medulla from the pons. Hitzig, Bechterew, Wood, following Eulenberg's and Landois' work, found a center in the dog's brain practically identical with that for the hind limb, the destruction of which caused variations in temperature of the contralateral side, independent of muscular action. Injuries of the corpora striatum have been found by Ott and others to result in high temperatures. The experiments of Aronsohn and Sachs [13] upon heat puncture are particularly interesting. They found (1) that destruction of the mesial side of the corpora striatum lead

to increase in temperature and that (2) electrical stimulation of this area had a similar effect. Wittkowsky [14] after heat puncture found the CO_2 content of blood unchanged, while in septic fever there was a constant decrease. Martin [15] discovered that albumen was absent in the urine after heat puncture, but usually present in fever of septic origin. Schultz [16] concluded that heat production is due to a stimulation of the muscle without visible change, at the expense of nitrogen free bodies and perhaps, is closely associated with Pflüger's "chemical tone." Rolly [17] showed that with the consumption of Nitrogen free bodies after heat puncture goes an increase in the temperature of the liver, it becoming the warmest organ of the body (Hirsch and Rolly [18]). In fact the presence of glycogen in the liver was found necessary to obtain the hyperpyrexia after puncture.

Kemp,[19] experimenting with curare, thought that he had proved that there are nerve fibres going to the muscles, distinct from the motor fibres which control the production of heat. Mosso [20] showed that after paralyzing an animal with curare the injection of strychnin led to increase temperature.

Ito [21] found that the duodenal temperature increased more after heat puncture than any other part of the body and recently (1910) Sinelnikow [22] working under the direction of Knonecker has claimed that the effect of heat puncture is upon the abdominal organs, liver, etc., rather than upon the muscles, and Streerath [23] has located the most effective site for causing elevation of temperature as a sharply bounded area at the anterior medial portion of the optic thalamus and found that strychnin produces its effects sooner, and in smaller doses on "heat puncture" animals. Pembrey [24] in 1897 reported two cases of traumatic cord section in man in the hope of clearing up the point as to which is the cause of the change in temperature; increased or diminished heat loss or increased or diminished heat production. The data furnished is insufficient, but observations were made upon deep and superficial temperatures and he concludes that the power of heat regulation is abolished by such injury and that if the patient is exposed to moderate cold the temperature falls because of increased loss of heat and diminished production of heat, in other words the normal stimuli leading to increased heat production and diminished heat loss are lacking. With heavy bed clothes increased temperature due to increased heat production, and diminished loss is obtained. He says that the paralyzed parts soon cease to sweat, the lungs ventilate less perfectly and the increase in temperature once established leads to increased metabolism.

With these experimental and clinical results in mind a brief review of the present case is of interest. In spite of the flaccid condition of all of the skeletal muscles of the body except those about the neck and head, the lessened heart action (moderate pressure with slow pulse), the absolute freedom from infection, and the small amounts of food and water taken, this patient, with a crushed cervical cord, developed a hyperpyrexia, although the weather was not unduly warm and the amount of bed clothes was very moderate. Unfortunately, because of the absence of the local weather observer we are unable to submit a temperature curve with the clinical record, but it is quite clear from the chart that the ordinary diurnal variation of the California climate played no evident part in the rise and fall of the body temperature. It is true that there was no marked vasomotor disturbance of the skin, except a persistent tasche cerebral after stroking it, only normal sweating, and that, although the diaphragmatic breathing was increased in rate, it probably was inefficient in ventilation as judged from the stasis at the pulmonary bases and the cyanosis. The mouth was usually dry and thirst was complained of. Probably some of the elevation of temperature was due to heat retention from inability of the body to cool itself by evaporation from the skin and lungs, but there was no marked interference with the loss of heat by radiation and conduction, the most important method of loss, so that we can probably look upon the hyperpyrexia as due to increased heat production. It is interesting to note that strychnin was given our patient several times and this may have played a part in increasing the temperature by some direct effect on the cord or muscles. The exact source of the heat it is impossible to determine. It certainly is most striking to get so much generated when the major portion of the body muscles are thrown out of motor function. It would seem as if chemical processes in the quiescent muscles, perhaps controlled by special nerve fibres (Kemp, Mosso), might explain it. The relation of the anterior horn cells to the muscles was not disturbed except over a limited area. There were no noticeable spasms of the neck muscles, nor evident muscular changes about the site of injury. It is true that there was a steady pull exerted upon the neck muscles by weights attached to a harness supporting the head. This may have contributed much to heat production. The liver and the intestinal tract and the various glands undoubtedly supply much of the body's heat and their part may be as great as would be indicated by the effect noted by Rolly and later Sinelnikow upon animals where no increase in temperature took place in injuries of the nervous system unless there was a preliminary store of glycogen in the liver. Unfortunately we made no glycogen determinations upon the liver in the present instance. The extent of the relation of vasomotor mechanism to the regulation of heat is difficult to determine in any given case, as well as in general. Judging from the experimental work done and our case, it would seem to play a subsidiary part in the temperature changes. It seems true, as Krehl has said, that after cord severence the body temperature becomes a "plaything of circumstances." That there are some inhibitory nerve paths that have to do with heat regulation and that pass through the cervical cord from the higher centers seems likely. It is also interesting in this connection to note that the higher the lesion the greater the effect produced upon temperature.

Clinically, the changes in temperature following cord injuries are significant in making probable the occurrence of hysterical fever as described by Dippe [25] and Levison,[26] especially where the halves

of the body differ in temperature; also of fevers in the hypnotic state and perhaps such so-called reflex fevers as catheter fever, etc. The points brought out by Wittkowsky and Martin in distinguishing the high temperatures of nervous origin from those due to sepsis are also worthy of note in differential diagnosis. Persistent high or low temperature after spinal injuries high up, where no infection is present mean, (judging from all the cases I have been able to find on record) a complete section of the cord. The higher the lesion the higher the temperature is apt to be. The damage done is usually from the preliminary crushing and haemorrhages and not from persistent bone pressure on the cord. The number of recorded cases where bone pressure persists in the cervical cord regions is very small. That the retention of the normal plantar reflex (and even its exaggeration, so that the whole leg moves in the absence of the patellar and other reflexes) may take place in complete section of the cord is a fact to be remembered, and it may indicate a state of the cord permitting of impulses reaching the muscles from the cord and having to do with heat production.

Further study of such cases as the present one may bring out important physiological facts in regard to heat regulation. It is to be regretted that conditions did not favor a more complete study of this case. Careful plethysmograph and blood pressure tracings, a study of the temperature of various parts of the body under varying conditions, an estimation of the glycogen in the liver after death would all be valuable, and not difficult to carry out. A study, by Waller's method, of the moisture given off, or the use of a calorimeter, would add much to our present knowledge. If the interest of others, who may have such cases fall into their hands, is attracted by the present report, its aim will have been fulfilled.

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TREATMENT OF NAEVUS VASCULARIS BY THE USE OF CARBON DIOXIDE SNOW.

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Within the last ten years, or, more properly speaking, within the last five years, for it is only within that time that it has been brought into practical use, a new remedial agent has taken a definite place in dermatological therapeutics, an agent, which possesses many of the virtues of the older remedies, physical and otherwise, without many of their disadvantages; I refer to refrigeration. The principle of refrigeration, as first instituted by Detlefson [1], consisted in applying an ethyl chloride spray to the diseased areas; later liquid air was brought forward, and it was the desire for a more stable, more convenient and cheaper substitute that was responsible for the advent of solidified carbon dioxide, the credit for the utilization of which belongs to Pusey. The fact that the application of carbon dioxide or liquid air, under pressure, produces a freezing of the tissues to a considerable depth, distinguishes freezing from all other similar methods.

In order that the terms applied might be clearly understood it seems to me that it would be appropriate to classify the vascular naevi, and I would divide them, for practical purposes, as follows:

1. Flat Naevi—a. Naevus Araneus.
   b. Naevus Flammeus.
2. Hypertrophic Naevi—a. Cuticular.
   b. Subcuticular.
3. Angioma Cavernosum (Winiwater).

1a. Naevus Araneus is the ordinary spider naevus consisting of a central capillary vessel with small arborescent branches and normal skin between the branches.

1b. Naevus Flammeus consists of a superficial plexus of dilated capillary vessels, which are so closely approximated as to show no normal tissue between them, displaying a uniform discoloration, popularly known as "port-wine" mark.

2a and 2b. Hypertrophic naevi consist of a well defined, elevated, often irregular, mass of intercommunicating blood vessels of uniform color, showing a tendency to increase in size shortly after birth and then remaining stationary. The subdivisions are obvious.

3. Angioma Cavernosum is practically the same as No. 2 with the exception that it continues to increase in size at the expense of the surrounding tissues, which it destroys by pressure.

Action on the Tissues.—The initial result of the application of the snow is a temporary contraction of the blood vessels, the skin appearing white, de-

pressed, and of china-like hardness, the depth of which may vary from 1-32 to ⅛ of an inch, according to the length and pressure of the application, and this persists until the frozen surface begins to thaw, when rapid dilation of the vessels occurs. The resulting erythema is followed, in from 2 to 24 hours, by the formation of a vesicle and a certain oedema. Within 2 or 3 days, the oedema disappears and the vesicle is replaced by a crust which separates, without ulceration or hemorrhage, in from 9 to 14 days, leaving a smooth scar of normal color. Occasionally a slight pinkish tinge persists a week or two, but this disappears without treatment, being purely the result of inflammatory reaction.

Naevus of Cheek.

Fabry [2] gives the following reactions as a result of treatment on the skin:

1 min.	1½ min.
8 hrs., slightly red, small vesicle.	Reddening.
48 hrs., large bleb.	Vesicle.
72 hrs., large bleb.	Small vesicle.
6 days., vesicle.	Hard tissue.

2 min.	3 min.
No reaction.	Reddening.
Indurated skin, no vesicle.	Large bleb.
Sunken tissue.	Small hemorrhagic vesicle.
Adherent, long strips of skin.	Infiltrated hemorrhagic tissue.

Carbon dioxide snow causes in living tissue by its sudden, strong, cold effect a sharply defined inflammatory reaction, the depth of which depends on the duration of the treatment; five seconds, according to Hubbard [3], will remove the top cellular layer, ten seconds will attack the papillary layer, while twenty to sixty seconds will suffice for deeper growths. This agent, then, attacks not only all the layers of the skin, but also the cells of the subcutaneous tissues and such tissues as may be of low vitality, are readily destroyed by a reaction which need not be so severe as to destroy the healthy cells. We have, then, an agent that can produce sufficient irritative action on the vascular tissues of an angioma to cause a partial or complete endarteritis, at the same time, leaving sufficient epidermal cells to restore, to all intents and purposes, a normal skin. Thus it is apparent that the snow does not act, strictly speaking, as a caustic, since it does not destroy tissue immediately, but the blanching of the skin and the retraction of the lesion are due to an interstitial fibrosis and the obliteration of the vessels.

Result of Treatment.

Microscopical Action on the Tissues.—Juliusberg [4] finds in tissues excised 14 hours after treatment, that the epithelium shows the most changes, the cells appearing structureless and homogeneous and the neuclei, with the exception of a few cells in the basal layer, do not stain. Beneath the epithelium is found a thick border of large polyneuclear leucocytes, which also infiltrate the connective tissue, and the connective tissue cells, likewise, are swollen and hypertrophic; the lymph spaces are widely dilated and filled with a coagulated homogeneous mass. The blood vessels show a perivascular infiltration of leucocytes and are dilated and filled with thrombi composed of erythrocytes, or leucocytes, or hyaline or of the mixed variety. The elastic fibres are unchanged, but Weigert's stain shows the entire connective tissues to be impregnated with fine strands of fibrin. Bunch [5] suggests that the katabolic appearance of the sections might be due to rupture of the cell membrane, since a temperature below 4° C. causes water to expand and this expansion might well produce a rupture of the cell membrane.

In a specimen of an angiomatous tumor, which had been incompletely treated by the author one year before, the patient having died of intercurrent disease, secured and prepared through the courtesy of Dr. S. L. Haas, the following conditions prevailed: after placing the tissue in Kaiserling I, paraffin sections were cut and stained with eosin and alum haemotoxylin, Van Giesen's stain and Weigert's elastic tissue stain with the following appearance:

Eosin-haemotoxylin.—The epidermis is thin, although there is a relative thickening of the horny layer, and the Malphigian layer averages about six cells in depth with but very little differentiation of the various layers. The cutis is considerably thickened and very fibrous and, occupying its lower layer and extending somewhat into the tela subcutanea, is a tumor with the following appearance: the tumor is not of regular outline, but divided into irregular groups of tissue stroma like the rest of the corium. The tumor is composed of capillaries of varying size, in many places still containing blood arranged in varying degrees of compactness. Two types of cells predominate in the tumor, one with a fusiform pycnotic neuclei like that of the endothelial cells lining the capillaries, the other containing large, vesicular and irregular neuclei. Scattered throughout the tumor are hyaline, bluish red staining bodies,

Naevus of Forehead.

about 30 u. in diameter, which do not appear to lie in the vessels; and many of the vessels of the tumor and the underlying tissue show considerable thickening of their walls, especially in the media, while a few vessels contain fairly well organized thrombi. Scattered throughout the tumor are a few hair follicles, sebaceous and suderiferous glands.

In one portion of the section (Fig. 1 and 2), occupying the upper layer of the corium just beneath the epidermis, is an island of tumor tissue, which has the same appearance as the main tumor mass, with the exception that there is more fibrous tissue separating the capillaries. Since the original tumor also occupied the upper layers of the corium, preceding treatment, and this a portion which has not undergone retrogression, the appearance of the remainder of the corium, i. e., the fibrosis, thickening of the vessel walls and the thrombosis, is in all probability due to the treatment; the fibrous tissue having replaced the vascular elements.

Sections stained with Weigert's stain show an increased thickness of the elastica interna of the vessels, while Van Gieson's stain offers nothing additional.

Action of Bacteria—Although the investigations of White,[6] MacFayden,[7] and Wolf and Meyer[8] have shown, experimentally, that the prolonged to intense cold (−180° C.) has no effect on pathogenic bacteria, it probably lowers the resistance of the organism and allows the natural forces to overcome the invaders, also the reaction caused by the snow, may assist in the destruction of the bacteria.

Comparison With Other Methods.—The methods with which carbon dioxide snow might be compared are as follows: 1, Liquid air; 2, radium; 3, surgery; 4, cautery puncture; 5, electrolysis; 6, high frequency spark. 1. Liquid air undoubtedly does splendid work and probably its effect more rapidly, due to its temperature of −180° C., but on the other hand, it is commercially unobtainable, hard to preserve, costly, difficult to apply to small areas, and considerable skill and practice are necessary to limit it to the diseased part.

After Treatment.

2. Radium causes no immediate destruction of tissue, the results being due to a reaction of the tissues, but radium, in effective quantities or strength, is practically prohibited to the average practitioner on account of its cost, and one may have to wait weeks or months for a reaction. Furthermore, it is exceedingly difficult to keep in place on a restless child, and it is mainly in children that we find these growths, and finally, it occasionally produces telangiectases.

3. Surgery submits the patient to all the dangers of an operation and an anaesthetic, it is painful, bloody, not infrequently followed by reoccurence and the cosmetic result leaves much to be desired.

4. Cautery puncture is chiefly valuable only in naevus araneus or in punctate hypertrophic naevi. It is a painful prolonged treatment and the cosmetic result is far inferior to that of carbon dioxide snow.

5. Electrolysis is undoubtedly superior in the treatment of naevus araneus or teleangectases, but, like cautery puncture, is painful, must be often repeated and frequently fails.

6. The high frequency spark is often efficacious in the treatment of naevus flammeus, but is open to the same objections as Nos. 4 and 5.

Knauer [9] claims trichloracetic acid is equal in every way to carbon dioxide snow, cheaper and easier to prepare; but whatever diseases this may be applied to, it is certainly not applicable to the treatment of angiomata.

Against this array, we have, on the side of carbon dioxide snow, the following facts: the apparatus and materials for preparing, collecting and applying it can be always at hand and the preparation involves only a few minutes and the cost is small. It is bloodless, comparatively painless, rapid and the number of treatments are exceedingly few, and, while its temperature is not as low as that of liquid air and its action slightly slower, it avoids all danger of a slough and the amount of pressure can be definitely regulated. Furthermore, there is no difficulty in confining the application to the border of the lesion and, finally, the cosmetic result, i. e., a fine pliable, smooth, white, hardly visible scar, is not equalled by any other method; in fact, as MacLeod [10] says, "with the possible exception of radium, which is the only agent which approaches it in efficiency, it is questionable, if we did not have carbon dioxide snow, whether it would be advisable to treat the common raised angiomata of infants."

Apparatus and Method of Preparation of the Snow.—Carbon dioxide gas is reduced to a liquid at a pressure of thirty atmospheres and a temperature of 0° C. and, as delivered in tanks, is a colorless, transparent, liquid which, when exposed to the air, evaporates rapidly with the result that a far greater degree of cold is produced, and the fluid is changed to a loose white snow-like substance. The apparatus utilized for collecting the snow and preparing it for application may be divided into three classes: 1st, those in which the snow is loosely assembled and transfered to a receptacle of varied size or shape for the purpose of compressing same into a solid state. The objection to this form of apparatus, which is exemplified by the tubes of Sutton [11] or Kaznitsky [12] is that the snow must be handled twice and the resulting stick, except that produced by the apparatus of Biddle and Wollenberg [13] is not of the desired firmness. 2nd. The second class of apparatus, as exemplified by that of Hubbard [8] and Freund,[14] compress the snow in the receptacle with whatever firmness may be obtained from the pressure of the gas as it issues from the tank. While this removes the objection of handling the snow twice, the resulting stick is not as firm as might be desired. 3rd. The third type of apparatus is one in which the snow is collected and compressed to the hardness of ice in the same receptacle, and it is an apparatus of this type that the author has been using for the past three years. A similar apparatus, with the exception that a special attachment must be applied to form a firm stick, is described by Edwards [15] (July 8, 1911) as an original apparatus.

The apparatus used consists of a brass cylinder of an interior diameter of one inch and a total length of eight inches, the lower end of which tapers down, in the last one and one-half inches, to three-eighths of an inch in diameter and is perforated for five and one-half inches of the shaft with numerous openings of a small size.

These openings are in turn covered by chamois skin fastened with silk thread, which is surmounted by a hard rubber sleeve, also perforated. The upper end of the apparatus is threaded to screw, with the interposition of a suitable union, directly to the tank. In order to form the stick, the outlet of the tank is depressed to an angle of approximately 45° or totally inverted, and, after covering the apparatus with a towel, to prevent too rapid evaparotion, the gas is slowly turned on. In approximately one minute, the cylinder is filled with a fairly compact snow, the valve is turned off, and the apparatus removed from the tank. A threaded piston, which can be screwed into the upper end of the tube, by means of a shield which it carries, is now inserted and the piston is forced home by means of its screw until further compression is difficult. The piston is then removed from the cylinder and the resulting block of ice released by allowing hot water to run on the apparatus until, by shaking it, the ice falls out, or, if so desired, the tapering nozzle can be removed and the collector used as an applicator.

Fig. No. 1. showing an island of angiomatous tissue (probably an untreated area) surrounded by dense fibrous tissue.

The resulting stick is about 2½ inches long, firm as ice, can be cut with a penknife and presents a diameter varying from ⅜ to 1 inch. No special applicator is necessary, an ordinary thumb forceps fulfilling all requirements.

Method of Application.—Since the effect produced by the treatment depends on the following factors, all applications must be made with these in view; they are: 1st, duration of the treatment; 2nd, the amount of pressure applied, and also two secondary factors, which enter into play, (a) the individual sensitiveness of the skin; (b) the resistance of the treated tissues.

As a preliminary to the treatment, it is desirable to wash the surface with alcohol to diminish the possibility of infection, and if lesions on the eyelid, or the mucous membrane of the mouth or lips are treated, it is desirable to protect the eyeball in one case, the gums in the other, with cotton, which should be dry; otherwise, the cotton will freeze and act, in a milder degree, like the snow itself.

The pressure, which is essential, should be applied in proportion to the depth of the lesion, generally speaking, it should be of sufficient strength to cause anaemia of the treated area, since this condition is essential to the success of the treatment; for if no pressure be applied no freezing occurs, since the stick gives off gas so rapidly that, without pressure, a layer of gas (Crook's layer) is maintained between the skin and the stick and actual contact of the two prevented. The insertion of the stick in ether for the purpose of reducing the temperature of the snow is, according to Pusey,[16] fallacious, since the stick only lowers the temperature of the ether to that of the snow. Strauss[17] recommends that deep seated angiomata be sensitized to the action of the snow by previous exposure to the X ray (4/5 of the erythema dose with a medium soft tube), and Pusey[16] advises that flat naevi be treated with the X ray to the point of slight reaction before freezing, while Morton[22] suggests the use of the high frequency spark for the same purpose. The use of both these agents, and also radium, by causing a slight reaction of the tissue prior to the application of the snow enable us, often, to produce a far quicker result than would be possible with the use of the snow alone.

It is best, in figuring out the duration of the treatment, to err on the side of safety, and with ordinary lesions 10 seconds will suffice for the first application; if the area be large, several applications may be necessary, although, generally speaking, 30 seconds can be given without danger of scarring. Should, however, destruction be the goal desired, without particular regard for cosmetic result, treatment of 1 minute may be given, followed by a second treatment of the same duration immediately on the thawing out of the first. It is not desirable, except for the purpose of destruction, to make a second application to a treated area, until the lesion caused by the treatment is entirely healed; and one should not be too hasty about applying a second treatment, since the lesion often continues to retrogress for several weeks after it has healed, and a second application may cause a slight depression in the skin and spoil what would be, otherwise, an excellent cosmetic result. Thus the action of carbon dioxide snow can be graded from a mildly stimulating one to that of an active destructive agent.

Factors Increasing Susceptibility.—The face and flexor surfaces are most sensitive, women, particularly blondes, are more sensitive than men, while children are most sensitive, 3-4 times as much so as adults, 5 seconds producing as much effect on a nursling as 20 seconds on an adult, while exposure to the X ray, radium or the high frequency spark increases the sensitivenss of the skin to the snow.

Contraindications.—Patterson[18] advises against using it, for a long period of time, on alcoholics, diabetics, those suffering from arteriosclerosis or on lesions situated directly over bony prominences; however, the author has used it repeatedly on lesions situated over bony projections, without the slightest deleterious effect.

Results.—Broadly speaking, you can destroy the vascular tissue in vascular naevi with carbon dioxide snow, and the only objection lies in making these areas depressed or abnormally white. Morton[20] reports 105 cases presenting 129 naevi of the following varieties:

Capillary	85
Cavernous	32
Capillary and cavernous	5
Port wine marks	4
Lymphatic	2
Stellate	1

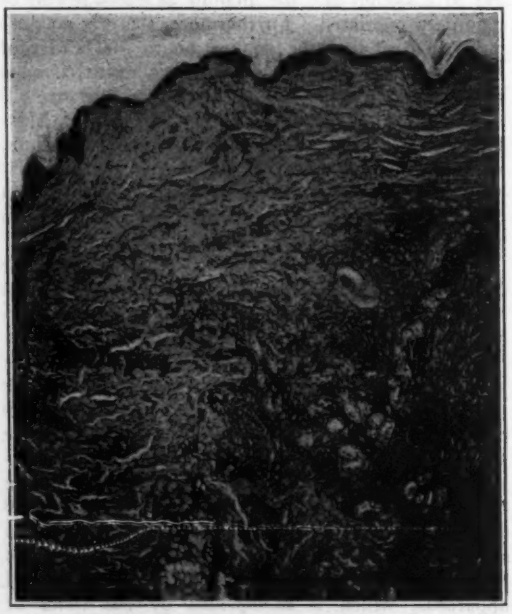

Fig. No. 2, showing the skin surface of same island of angiomatous tissue together with adjoining fibrous tissue.

Of the capillary variety, 74 were cured in one application, 6 in 2, 2 in 4, and 1 failure. Of the cavernous variety, 20 were cured in 1 application, 4 in 2, 2 in 3 applications and 6 failures. Of the entire series, 2 had electrolysis and the port wine marks are still under treatment. This shows 87% of capillary naevi and 62½% of the cavernous variety cured by a single application. Bunch,[5] in reporting a series of 300 cases, without giving any statistics, says, in the majority of cases, that a single application is sufficient, while Salomon[23] reports 250 cases of angiomata with 93 permanent

cures and Wickham [21] treated telangeictases, caused by the X ray, with excellent results.

The best results are obtained where the blood vessels lie in the skin, but with deep cavernous angiomata, where destruction is impossible, undesirable or dangerous, a very satisfactory covering of connective tissue is produced, which is smooth and has a texture hardly distinguishable from normal skin. A case of a large hypertrophic naevus of the scalp of bright red color and raspberry-like surface, treated by the author with carbon dioxide snow, now presents a slightly elevated, smooth, white surface, bearing a fairly profuse growth of hair where apparently none existed prior to treatment. This, of course, is not a curative procedure, but as a cosmetic process by which the more obvious and distressing lesions may be concealed, it certainly must be recognized as a distinct addition to our therapeutic armamentarium.

Bad Results.—Occasionally the application is followed by a neuralgia, especially when the area treated is over the site of emergence of a nerve, but this is only transient, passes away in 2 or 3 hours, and is easily controlled with hot applications; it is also possible that an incompetent or incautious operator will produce, by over treatment, a hard white ivory-like scar, or a depressed one, but these are errors of technique. Janeway [19] reports of lupus erythematosus, treated with the snow, in which an epithelioma developed, but, as his had been previously treated with the X ray, it is far more probable that the lesion was due to the first treatment. Heidensfeld [24] also reports a case, in a 4-year-old child, where, some time following the treatment of a large angioma of the forearm, the lesion became the seat of an acute inflammatory process with multiple, actively purulent, foul smelling and somewhat gangrenous ulcerations, which resisted all forms of local treatment, and with no attributable cause. This is the only really bad result reported in many hundreds of cases, and was, in all probability, not due to the snow.

After-Treatment.—As a rule, the less treatment applied to the lesion the better the result; a simple ointment of equal parts of ung. zinci oxidi and vaseline will suffice to protect the parts and alleviate any sense of discomfort; outside of this it is not necessary to carry out any treatment except in those cases where a slight oozing occurs on separation of the crust, which not infrequently happens in large hypertrophic naevi. This is, however, of no moment, and is readily controlled, without the aid of a physician, by the pressure of pledgets of cotton soaked in peroxide of hydrogen.

Conclusions.—We have then, in carbon dioxide snow, a simple, effectual, comparatively painless, bloodless and certain agent which is far preferable to any other remedy in point of rapidity, ease of execution from the standpoint of the operator, and tolerance on the part of the patient; and, since the great majority of these patients are children, painlessness and rapidity are of prime importance. Furthermore, the cosmetic result cannot be excelled, and seldom equalled by any other agent, and, in that class of cases where a radical cure is not obtained, it is a safe and efficient method for relieving the disagreeable disfigurement which causes the patient so much discomfort and annoyance.

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MISTAKES IN MEDICAL EDUCATION.*

By DUDLEY TAIT, San Francisco.

It affords me sincere pleasure to express publicly my admiration for the highmindedness that has characterized the conduct of the Oakland College of Medicine, its strict adherence to absolute honesty in the face of temptation, its loyalty to sound principles, and above all, its freedom from the taint of commercialism.

My admiration is enhanced by the obviously ephemeral character of such an institution; for it is no longer possible to maintain a modern medical school on the basis of personal sacrifice.

The faculty should find both hope and encouragement in the knowledge that the State University was born in Oakland, under the name of California College, at the corner of Fourteenth and Webster streets.

As a contrast, I crave your attention this evening to a few sketchy impressions and observations, based upon eight years' experience as a state medical official.

The most salient fact demonstrated by a methodical and persistent investigation of over eighty medical colleges of this country was their flagrant deviation from, not to say contempt for, the written law. This wholesale shortcircuiting of what commonly constitutes honesty in commercial and industrial lines was noted in the small as well as in the large schools, in humble quarters as well as in great centers. My stenographer sent a letter to fifty colleges, the published announcements of which made a high

* An address delivered at the graduating exercises of the Oakland College of Medicine.

school diploma the minimum matriculation requirement, advising the dean of her desire to begin the study of medicine, and calling his attention very explicitly to the fact that her preliminary training consisted only of an incomplete grammar school course. She also stated her willingness to make any necessary pecuniary sacrifice in order to reach the goal of her ambition, the degree of M. D.

Within a week our mail carrier showed signs of fatigue; never before had telegrams been left in such numbers at my office. Two replies contained advice of the highest order as to the necessity of a thorough preliminary training prior to entering upon the career of medicine. In the vast majority of cases, however, unconditional matriculation was granted. A Kansas dean wired his willingness to meet the young lady at the depot. A Texas dean wrote effusively: "Enchanted to hear from you. Hope you will come soon. Tell me more of yourself in your next letter."

Thus, fraudulent, dishonest methods inveigle the naive, poorly equipped matriculant, follow and contaminate him during his much abbreviated annual courses, and then foist him upon the unsuspecting public, to sing the praises of his commercially steeped Alma Mater, bring discredit, if not disgrace, upon the title of M. D. and eventually swell the ranks of that worst of social vampires—the quack. How could it be otherwise if the stream is polluted at its origin, if colleges seek to enrich themselves through wholesale violations of the laws regulating the practice of medicine, and fail to even observe the conditions enumerated in their own published announcements? In business circles such methods are considered violations of contract and made amenable to criminal law. The practice, however, has been prevalent in the medical schools of this country for so many decades that the element of fraud no longer surprises. In most of the states, Boards of Examiners have the power to adjust these conditions, but unfortunately these quasi-judicial bodies, designed primarily for the protection of the public, have not always kept faith with the people; many have been false to their oath of office and have wilfully neglected those sections of the statute regulating the character and extent of medical education.

Indeed, state medical examiners seldom avail themselves of the splendid educational opportunities delegated to them by legislatures. Only a few years ago California was credited with the possession of the highest standard of examinations for licensure. To-day, by reason of endless exemptions accorded organized pathies and isms (naturopaths), cancer fakers and healers, failure to investigate medical colleges, non-enforcement of the legal minimum standard of qualifications as determined annually by the Association of American Medical Colleges, neglect to extend what this State first inaugurated, i. e., practical examinations, and finally the astounding lowering of the marking system enacted by the recent legislature, to-day the California medical act has been robbed of almost all its power for good and relegated to the Massachusetts level—the lowest in the United States. Alone among the States, California may boast of having increased the number of its medical colleges during the past half decade. The matriculation list of one of the Los Angeles schools of Osteopathy exceeds the total enrollment of the ten medical colleges of the Pacific Coast.

The conclusion is self-evident: neither the profession nor the public wanted a high standard of medical education in California. We seem to be advancing rapidly toward the open door policy, thus hastening the inevitable realization of the socialistic dream of state control of health services and of medical education. But let us return to our muttons, the medical colleges.

Is it astonishing, with fraud written all over medical college announcements, that 15 per cent. of the graduates in medicine throw aside their sheepskins and seek other fields of labor prior to their third year of practice? Such are, nevertheless, the conditions prevailing in this country, and no other country can attempt to duplicate this eloquent but lamentable record of failures, failures almost invariably directly traceable to that shameless American product—the greedy, predatory, short-cut, proprietary medical school. May it not, therefore, be asked with some degree of propriety if medical schools are not largely responsible for the distrust of scientific opinion so prevalent in this democratic country?

In the opinion of many, the mere increasing of matriculation requirements constitutes the essential, if not the only means of raising the standard of medicine. While no one will deny the desirability of a training in the fundamentals prior to entering upon a medical career, one is, nevertheless, justified in asking if the medical teaching faculty has advanced *pari passu* with the medical student body. After prolonged search I fail to see it.

Has the clinician made a corresponding sacrifice of time or adapted himself to the standard of his biologically trained audience? In his honest endeavor to recede from time-worn didactic methods of teaching, has he broken absolutely with tradition and espoused the cause of scientific principles? Has he practiced less and investigated more? How many schools would dare answer affirmatively?

Perhaps the solution will be found in the gradual development of a new type of teacher: the university clinician, capable both of intelligently bridging the academic and clinical years and of establishing a more profitable co-operation between the various departments of the university.

The fundamental question is, how may the necessarily limited time of medical education be most profitably employed in imparting to the student such knowledge as is most useful to him in his future career? How has the faculty answered this question? In the majority of instances, by confronting the student with additional subjects, additional courses, additional units, additional text-book details, additional parrot-like recitations, and with it all the four-year system is still religiously adhered to. It is just this cramming process and especially the unfortunate appropriation of time by the teachers in the intermediate subjects that causes tired and neurasthenic students; the able men are severely maimed, the weaklings are ruined for life as they become veneered with prejudice, having never learned to think for themselves or to work unaided. Starling aptly remarks that in giving his whole soul to his work the student loses his soul. How can we expect a tired student to exercise a trained reflective and analytic habit of mind on the numerous problems which present themselves?

Some medical schools of the ambitious university type have, I am convinced, reached the height of pedagogic absurdity in their endeavor to elevate the standard of medical education.

To discover and to teach are distinct functions; they are also distinct gifts and are not commonly united in the same person. While teaching involves external engagements, the natural home for experiment and speculation is retirement. Failure to appreciate the difference between the dissemination of knowledge and the advance of knowledge, has given rise to much confusion of thought and a tremendous loss of time and energy.

Is it not prostituting science to expect an eminent research man to teach freshmen? Is it not wholly unjust to both? Again, why should medical men be taught by physicists who know nothing of the physics required in physiology and practical medicine, and by chemists whose interest does not lie in the problems of pathological and physiological chemistry? Were it not better that chemistry be taught by the physiological physicist, by medical men who have gone through the whole training and know the needs and aim of practical medicine? At the beginning of their career, medical students become the sport of biologists, who use them as the flotsam and jetsam of their seas of learning and oceans of theories. "Biology as taught by non-medical men must go."* Teachers of anatomy must not forget that surgery is the proof of anatomy. Minute descriptive anatomy should not be allowed to crowd out applied anatomy, to the ultimate embarrassment of the junior student who enters the operating-room or faces the course in operative surgery.

We should weigh carefully the suggestion made by the world-renowned biologist, Jacques Loeb—that the prevailing mode of teaching anatomy, i. e., from the morphological viewpoint, has an atrophying effect upon the student's scientific interest and should give way to the functional method of teaching.

The ordinary student who is destined to become a general practitioner ought not to be required to spend time on the acquisition of knowledge which he will never use. The whole of his studies should have a distinct bearing on, and lead up to, the knowledge of the human body and its control in disease. The whole medical college should not be compelled to spend a disproportionate amount of time and energy upon subjects which will be of real use to a very few only, whilst subjects of the greatest importance have to be neglected in proportion to the amount of time devoted to ultra scientific matters. The accessory sciences must of necessity be subordinated to the highest purpose in the education of the medical man—to make him fit for the exercise of his future duties.

Were some medical faculties to pause and remember the immortal words uttered two thousand years ago by the Father of Medicine, "Art is long, time is short and technique is difficult," they would abandon the role of precedent worshipers, extend the medical rather than the premedical curriculum, cease developing the student's memorial powers, stop training parrots, get rid of "antiquated dictionary stuff," abolish the monastic system of examinations, and thus eliminate the large element of lottery, lead the student to the bedside at a much earlier date, devote three-quarters of the curriculum to clinical work, make the teacher responsible for the student, restore the old time close relation between the teacher and the student, and thus contribute to the primary aim of education, the formation of character and intellect.

"True and complete success in life requires more than mere aptness for learning, or the possession of a retentive memory, or facility of written or oral expression, or mere energy and zeal."

A man may possess all of these qualities and still lack the one indispensable requisite to ensure success in practical affairs—character—character and all that this term connotes, thoughtfulness, sympathy, courtesy and culture."

The teacher of the future must establish a forward outlook and instill hope in the student's mind. Hope, the dominant feature of modern thought, hope for the morrow, hope for the future, anticipation of something better, some improvement, or, at the very least, some change. Hope is the keynote of progress and the certain safeguard against retrogression.

* The writer was more profoundly impressed by the discussion on the scientific education of the medical student at the 76th annual meeting of the British Medical Association than by all other similar addresses. (Br. Med. J., Aug. 15, 1908.)

SOME POINTS TO BE CONSIDERED IN FEEDING INFANTS.*

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From the Children's Clinic of Cooper Medical College.

A simple enumeration of those digestive juices and ferments which are known to be essential must comprise at least fifteen substances, most of which

* Read in the Oakland Medical College Lecture Course, March 22, 1911.

are imperfectly studied. Realizing this, how difficult must it be to get any clear view of the physiology of digestion and its bearing on the problems we have to solve in feeding infants. Recent work has added much to our knowledge of the digestive process. However, what has been added is but a trifle compared to what still remains to be elucidated.

Before beginning the substitute feeding of children, one should study the physical and chemical differences between cow's milk and human milk and the differences in the structure of their fats and salts, and further, to search out the modifications of human digestion as affected by bovine milk fat and bovine albumins and salts. Not only must these factors be considered in any review of the digestion of substitute foods, but the modifying influences of the bacterial flora ingested with cow's milk must be taken into consideration. A further subject which must now occupy a foremost place in our considerations, is the effect of errors of metabolism on digestion. Too long have we been concerned only with digestive process to the neglect of the study of food absorption and utilization.

Beginning with the demonstrated existence of physiological stimuli and of appetite stimuli shown by the Pawlow School to be efficient both for gastric and pancreatic secretion, we find that these unquestioned facts find little application in current pediatric practice, and yet the practical value of the first is demonstrated in the marked improvement in the condition of an ailing child that often follows a change of nurses or of environment without any change in food mixtures. The installation of an understanding kindly nurse will often, without diet alteration, initiate a marked upward movement in the weight line of an infant who has been doing badly on a reasonable food mixture. The weight response to quiet, comfort, or warmth also testifies as does the improved health of the child to the validity of the principle.

That digestion waits on appetite is nowhere better demonstrated than in infant feeding practice. Anorexia and many nutritional upsets, especially those that follow overfeeding, are readily relieved by increasing the intervals between meals and reducing the number of meals to five in twenty-four hours if the child be less than a year, or if he is between his twelfth and sixteenth month, to four; and from this time on to three feedings in 24 hours.

The amount of food to be given at a meal presents a problem variously answered. Some would base the size of an infant's meal on the average amount taken by a healthy baby from the breast, determined by ante and post prandial weighings. This is no standard at all as the child rarely takes a like amount at two feedings. Again, the size of the stomach determined post-mortem has been suggested as a guide but so variable is the size at any given age, and so fallacious the possible measurements, that this idea has passed. especially since the showing of Tobler that the fluid parts of milk begin at once to leave the stomach and that the volume of the curd is much less at any moment than the volume of the milk ingested. Appert has laid down the rule that a reasonable meal is one approximating 1/50 of the body weight and that a daily ration of 1/10 of the body weight plus 8 ounces is appropriate. Even this is open to the objection that weight varies with condition and the wasted child of six months old may weigh less than the well nourished one of three and yet need twice as much food. However, it may be accepted as a fair working rule, if we keep in mind that children need at least one gram of albumin per pound per day, or about what is contained in one ounce of milk.

A few years ago almost all American pediatrists, and among the Germans such men as Schlossman, Gaertner, and Monti, based substitute feeding on an attempt to modify cows' milk by manipulation until it became an artificial mothers' milk. Even had the chemical and physical make-up of the milks been identical, which they are far from being, the lack of uniformity in the proportions of fat, sugar, and albumin, contained in milk, doomed this plan to failure. Van Slyke has shown that in single milkings of individual cows, fat percentages vary from 2.25 to 9% and protein percentages from 2.19% to 8.5%, casein percentages from 1.5 to 4.5. In herd milk, fat variations from 3 to 5.50% occur, and the proteid content fluctuates between 2.3 and 3.7%. Even in milk resulting from blending the milkings of many herds percentages varied from 3 to 4.6% fat, 2.5 to 3.75% proteid, 2 to 3% casein. According to this author the variations were dependent on the following factors: (1) the individuality of the cow, (2) the breed, (3) the stage of lactation, (4) the ingested food, (5) the season, (6) the time and manner of milking. Half liters taken successively in a single milking of one cow gave in fat, percentages 2.2; 2.9; 3.5; 3.7; 3.8; 3.9; 4.6. As the milk of woman has been shown to be equally liable to variation it is obvious that all mathematical systems must fail in practice. Even to determine what the individual child ingests would be impossible unless one were able to resort to the Pawlow method of feeding with an oesophogeal fistula. The milk secreted for the breast pump is not the same as that secreted under the stimulus of nursing. The last parts of the nursing are richer in fat than the first and even could we empty the stomach by tube after feeding, the changes wrought by digestion would vitiate the results of analysis. As to the chemical differences in the fats, proteid, and minerals, of the two fluids they are so great that in such a paper they can be no more than indicated. In the fats of bovine milk the melt-

ing points are higher than in human, with a result that they are less completely fluid in the infant's stomach and tend to coat proteid curds and so interfere with peptic digestion. The fatty acids carry in their construction many more of the unsaturated carbon groups than do fats of human milk. These are more readily set free in the stomach and often become a source of irritation. It is probable that in some instances that they prevent the proper opening of the pylorus. Such fatty compounds, lower in olein content than those of human milk, seem to form insoluble soaps more readily. This action is accelerated by the excessive amounts of salts, especially the salts of calcium that exist in cow's milk. The chemical result is that often when cow's milk fat is tolerated by the stomach, it causes constipation. It seems to me that this is truest of clean milk such as certified. Probably in those milks that have a high bacterial count the fats are partially broken down in the stomach and the evidences of gastric irritation arise from the presence of excessive amounts of fatty acids or soaps of the higher acids in the stomach, whereas when the milk is clean, the fats reach the saponifying pancreatic lipase unaltered except by the slight emulsifying action of the gastric lipase and of the bile, the alkali salts, and the Co^2 set free by the neutralization.

Dr. Yerington, at the Lane Hospital, in an insufficient series of trials got evidence that seems to indicate that with clean milk of a certain fat, proteid ratio earthy soaps are formed in the intestine and excreted as such but that with a higher proportion of fat there appear free fatty acids, when the fat ratio is still higher free fat is wasted and gives rise to characteristic fat diarrhea. Personally, I think that when looseness of the bowels follows the exhibition of cream, it is most often because market cream or cream from ordinary dairy milk is used. Market cream is a mixture of dirt, starch, or gelatin, fatty acids, and bacteria, and makes a most effective, if rather dangerous, substitute for castor oil or rhubarb. An interesting fact well known to some nurses and mothers is that often when bottle babies are constipated olive oil or cod-liver oil will relieve the condition. It seems probable that this is due to the fact that the soaps of the alkaline earths are soluble in the olein of the oil and so are dissolved in the gut and more readily passed. Both oils carry a relatively high proportion of olein. The greatest objection, however, to the exhibition of excessive amounts of fat comes not from the digestive side but from the nutritive. From the most dependable researches it seems proable that fats after they are rebuilt in the intestinal mucosa are again broken down and reach the cells for utilization as fatty acids and when these acids are in excess they abstract from the body tissues and fluids mineral salts or ammonia radicles for their neutralization. These substances needed for the processes of proteid metabolism, are lost to the economy and there begins a destruction of body albumin. Often the first clinical signs of this damage are the development of a very definite ammoniacal odor in the urine, slight sweating about the head, and a peculiar lack of luster in the hair and skin.

There is little fat digestion in the stomach where, though a small amount of lipase is present, the fat is not in an emulsified condition and where the gastric acidity rapidly puts a stop to its activity. Sedgwick has recently laid much stress on this gastric lipase and has found evidence to support a claim that it acts as an activator of pancreatic lipase. On account of the presence of alkali salts, pancreatic juice, and bile, in the intestine an exceedingly fine fat emulsion is produced. The emulsified fatty acids then react with the alkaline carbonates to form soaps, which soaps tear apart the fine particles of fat, making them still smaller. This process is also accelerated by the carbon dioxid which is set free when the fatty acids unite with the alkalies. The ingested fat is then broken up into fatty acids and glycerol. What proportion of ingested fat is saponified is not known, but the most authoritative investigators believe that it all is. In infants between 5 and 8% of the ingested fat is normally lost by the stool. The soaps are taken up by the gut wall disintegrated and passed on to the tissues probably as fatty acid.

The utilization of fat by the tissues is a physiological mystery incompletely worked out. A certain proportion when there is more than the animal needs for processes of combustion may be deposited as such, but the vastly greater proportion of ingested fat is burnt up and excreted by the lungs as CO_2. The intermediate steps of this process of combustion have never been clearly worked out, but Pohl's experiments suggest that the series of ethane products, malonic, tartronic, mesoxalic, and glyceric acids, which are fully combustible in the body, are the ones normally formed. On the other hand, it is also possible from this work to conceive that an incombustible acid of the series, oxalic, for instance, may be produced by some fault in metabolism, and it is not improbable that this may be the cause of certain cases of acidosis with convulsions and pseudomeningitis.

Abderhalden states that while both fat and carbohydrate can be produced in the body from albumin, it is improbable that such change occurs under ordinary feeding conditions. We must not then regard the albumins as sources of energy, but only as the ground materials for growth and repair. Energy must, for the most part, be derived from fat and carbohydrate. Starches which are polysacchrids and sugars which are inverted in the gut, absorbed through its wall, burned in the muscles, and excreted as carbon dioxid. There is no question but that excess of carbohydrates can be laid down as fat. But whether the reverse is ever true, that is whether fat ever be transformed in the body as carbohydrate is to be doubted.

The ultimate structure of proteids has become more clear to us since Emil Fischer began to work on them. Briefly they are complexes of those chemical compounds called amino or amido acids in which identity is established by the presence of that combination of one nitrogen and two hydrogen atoms known as amine. There are bound up in the combinations, which form proteids, two, three, or more of these amino acids. The combination of two amino acids is known as the diamino; of three triamino and so on until the point is reached where very many are united in one complex molecule,

which in Fischer's terminology is known as a polypeptid. These polypeptids appear in early proteid digestion and the final result of such digestion is the breaking down of these into their constituent simple amino acids. These proteid molecules also in some instances, contain sulphur and phosphorus. The casein molecule contains both, and the casein of bovine milk differs from that of human in that a smaller proportion of the phosphorus occurs in organic combination.

From the albumins of the milk, human or bovine, must be formed the varied proteid bodies that occur in the organism of the nursling. As none of these albumins are in the unaltered state, it is obvious that a profound splitting up of the casein, lact albumin and lactoglobulin must occur in the digestive tract of the child. One must marvel at the remarkable ability of the ferments and harmones of the stomach, duodenum, pancreas, and jejunum that rend the complex proteid molecules into their constituent amido acids and the further series of ferments that rebuild these elemental integers of proteid (building stones the Germans name them) into the vast and complex array of cell and humoral albumins specific to the human structure. I will not attempt to burden you with more than to remind you that in considering abnormal digestion we have to keep in mind what Pawlow has taught us that the secretion of gastric juice gives varying response to different stimuli. To physiological stimuli, as hunger, or type of food, if these are insufficient or improper the secretion of gastric juice fails. We have also to remember that the pro-secretin in the duodenum is activated by the gastric juice entering the duodenum and that the proper secretion of pancreatic trypsynogen will depend on the change of the quiescent prosecretin into the active harmone secretin, which without gastric juice of a certain acidity is impossible, and, further, that when the pancreas puts out its secretion in response, that trypsynogen, its ferment is inert until activated by the enterokinase which must be wedded to trypsynogen before the peptid can be broken down into the simpler amido acids and be made fit for absorption. It is easy to understand that a minute error of one sort or another could throw this delicate complex out of order and lead to profound change in the infant's digestion.

Once in the gut wall, ferments as well as the inorganic salts, or at least the ions of inorganic salts, play a part in building up and utilizing these elements of the proteids for the body's needs. Every one of the infant's body cells is busy forming new cells and must obtain its albumin from ingested food. There is no albumin reserve, as there are reserves for fat in the subcutaneous tissues, and for carbohydrate (as glycogen) in the liver. If fat or carbohydrate be fed in excess, provided the digestion endures the overfeeding, these stores are augmented. But if albumin be administered in quantities greater than can be utilized grave metabolic consequences ensue.

Life in some mysterious way is bound up with the presence of colloids in the cells and the life proceses depend on the relation of these colloids to the salts, or those constituents of salts called electrolytes. Colloidal solutions of different sorts exist within the cells and retain their identity. Through them, however, diffuse these crystolloids and electrolytes, dissociating and reassociating without precipitating, for this action is prevented by virtue of the colloidal nature. At one time the action of one ion is dominant, at another time that of another, but on penalty of death the cell must always at a given moment be ready to dominate the action of a given ion. The ingestion of the vast mass of bovine milk salts makes it incumbent on the one hand that the body rid itself of those it does not need, entailing excessive and unusual excretory processes, or on the other hand, that it utilize salts not designed either in quantity or quality for its specific cell functions. Much work has been done, and is now under way in Germany, on the effect of individual salts on the nursling's nutrition. Especially Langsten and Meyer, and Nothman, have dwelt on the power of sodium chlorid solutions to raise temperature and to increase weight, and of calcium to depress temperature and to decrease weight. We are taught that sodium salts exaggerate tetany and spasmophilia, cause rapidity of pulse rate, apathy, frequent stools, and the appearance of sugar in the urine.

Such is a very hurried and cursory glance at the fate of the individual food elements of the infant's dietary. It is neither wise nor necessary in such a review to burden ourselves with the formulae or the terminology of physiological chemistry. But in considering a few facts about the gastric digestion of milk as a complex of fat, albumin, sugar, and salts, we may with profit dwell a moment or two on the subject of colloids and colloidal action.

The recent work of Alexander and Bullowa has thrown light on the vexed question of the differences of the curding of cow's and human milk in the infant stomach. They have emphasized the facts that colloids are of two kinds, one known as reversible, the other as irreversible. The irreversible colloids are readily coagulated by electrolytes and when dried out do not redissolve. However, even a very minute amount of a reversible colloid can protect one of the irreversible colloids from coagulation, so that after desication it will re-dissolve. It is stated that as little as 1/10,000 of 1% of gelatine will protect a colloidal solution. It has been demonstrated that casein is an irreversible coagulating proteid, whereas, the so-called lact albumin is a reversible or protecting colloid. It is well known that one of the striking differences between cow's milk and human milk lies in the fact that in cow's milk there is about 3% of this irreversible colloidal solution of casein and only about ½% of the protecting, while in human milk the casein is 1% and the protecting lact albumin is about 1½%. It is claimed that the effect of this fact on digestion is very clearly shown by the differences in the character of the flocculi of the renin precipitates of the two milks. Woman's milk forms a finely flocculated precipitate hardly visible, whereas cow's milk, being unprotected by reversible colloid, is very thoroughly and firmly coagulated. By the addition of a small amount of any protective colloid whatever, this protective action may be supplied. Many years ago Meigs, and following him Jacobi, advised the use of small amounts of gelatine or gum arabic to prevent the hard curding of milk. Barley

water and especially dextrinized gruels and like solutions act as protective colloidal solutions. The success that follows the use of citrate of soda as a milk modifier is suggested by Alexander and Bullowa to be due to the fact that citrate of soda acts as a protective colloid and not as an electrolyte. They have developed the fact also that colloidal protection is not confined to the action on casein but is important in maintaining fat emulsions as well, and that curds which contain much fat tend to cohere and have difficulty in passing the pylorus, and they have some doubt that complete peptonization can take place in the intestine except in the presence of an adequate quantity of protective colloid.

Observations, made in the wards of the Lane Hospital, indicate that the large, tough, leathery, casein curds appear in the stools as a result of the feeding of bacterially contaminated milk. Probably by the development of acidity a change in the electrolytes is produced which interferes with even the moderate amount of protective action that lact albumins ordinarily exert, with the result that the child's digestion suffers. Whether this be the true explanation or not, the following facts convince the writer that the commonest cause of the appearance of casein masses in the stools is the ingestion of unclean milk. The fact that a number of infants being fed on the same milk almost invariably all show the curds at the same time. Under these circumstances a bacterial analysis of such cow's milk will show an inordinately high count. When such milk is replaced by milk known to have a low bacterial count, or by the same milk boiled for 20 minutes without any other change in the formula, the curds will disappear from the stools. In spite of the contention made by many German and many American writers that these hard lima bean-like masses were made up of soaps and intestinal secretions, Talbot has shown that it is possible to sensitize guinea pigs to cow casein and that the sentitized guinea pigs give the same reaction to solutions of such curds as they do to solutions of pure casein.

It has been questioned if the young infant can digest starch. Kerley has shown that a large proportion of infants have power to convert and utilize starches but that the power is relative. Many observers have shown that specific ferments, not ordinarily present, are elaborated when animals are fed unusual food elements and it seems proven that while the amount of pancreatic amylase present is almost negligible in the early weeks of a breast-fed infant's life that it can be increased by moderate starch feeding.

Neither cane sugar nor starch can be utilized by the infant economy, but through the intervention of ferments and by the addition of water must be broken up when laevulose and dextrose are formed and as such are absorbed by the intestine. Milk sugar, too, is a polysaccharid which needs be broken up, in this instance the products of hydrolysis are dextrose, and galactose. For these purposes the salivary amylase of infants is negligible and the bulk of carbohydrate digestion is performed in the small intestine by the pancreatic amylase. Starches are broken down and form maltose which like cane sugar is inverted into dextrose and levulose which are absorbed as rapidly as formed. All the complex carbohydrate must undergo these inversions for normally none of them are absorbed as such into the blood but must be transformed into hexose compound before they can be utilized. As much as a pound of sugar can be absorbed by the intestine in a short time, without increasing the sugar concentration in the blood, which is normally about 12 to 15 grains to the liter. In the liver these molecules of maltose are united to form glycogen. The amount of glycogen that can be stored in the liver is limited, and the amount of sugar stored in the blood and other tissues cannot exceed a certain concentration. Under such circumstances any excess of ingested sugar is transformed into fats for storage. Carbohydrates are of use to the animal organism as sources of heat and muscular energy. In the infant economy the heat supplying function is of course paramount.

The bacterial flora inhabiting the breast-fed nursling's intestine are simple and definite for different levels of the intestine. By their reaction to Gram's Stain the bacteria divide roughly into gram positive and gram negative (the blue and the red bacilli as the Germans call them). In the colon of the breast-fed the majority are slender, gram positive, curved organisms known as the bacillus bifidus which grows readily on highly acid media. There are always a few red stained gram negative coccal forms and a few thick big bacillus aerogenes capsulatus. The bacillus bifidus probably represents an organism that is found deep in the acini of the maternal breast which undoubtedly is the progenitor of the bacteria found in the nursling's gut and enters with the breast milk. The number of bacterial races is greater in the case of the bottle-fed, but the dominant stain is the gram negative colon bacillus ingested with the cow's milk which has been acquired because of fecal contamination. The type of the bacteria is not alone to be considered, but specimens of milk, rich in bacteria, are most likely to contain injurious organisms; such as the germs of typhoid, dysentery, and scarlet fever, streptococci, and staphylococci. The two last are almost constant contaminators of milk and almost as frequently present are the gas formers, sarcinae, and yeasts.

In spite of the differences in the flora, the work of Herter and other competent observers seems to indicate that putrefactive processes in the gut of the healthy bottle-fed baby do not exceed those occurring in the breast-fed infant's intestine and undoubtedly the chief damage done by bacterially-contaminated milk lies in the changes wrought in the milk as a food stuff, and not in infection that follows invasion of the gut by the organisms. The normal flora of the intestine are, for the most part, able to attack and destroy organisms that have passed the sterilizing ordeal of the gastric juice.

It is as foolish to attempt to deal with feeding cases without stool examination as it would be to treat adult kidney cases without urine examinations. The routine examinations of stools are as simply and as rapidly made as routine urine examinations. With the exception of from 2 to 6% of the ingested fat, an infant's stool is normally made up of intestinal secretions and excretions, sugar almost never, and proteid hardly more frequently appear in the evacua-

tion. Starch, when given to very young babies will always be wasted in the stools and this wastage may be taken advantage of to influence the evacuation in cases of constipation provided too much is not given. The stool examination divides itself roughly into naked eye and microscopic observations. If with the naked eye one notes a white or gray hard or crumbly stool it means fat waste, small white lumps mean soaps, green stools sugar or starch fermentation or rarely facterial infection; brown stools result from starch waste or if the stools are very scanty from starvation, yellow brown evacuations looking like crude vaseline follow skimmed milk feeding. The normal stool is yellow, soft and smooth like mustard; a red coloration almost always indicates bacterial infection; small, soft pale lumps of uncolored faeces often erroneously called curds mixed with green stained mucus occur in times of starvation; large, white lima-bean-like masses are due to contaminated milk and are usually mixed casein, fat and soap.

In our microscopic examinations of stools we stain three smears on glass slides. No. 1 with Lugol's solution, No. 2 with Sudan iii, and No. 3 with Escherich's modification of Gram's stain. In the first, if free starch be present it will be determined by the blue iodin starch reaction, in the second free fat and fatty acids, if present, are stained brilliant red by the Sudan, and the third tells whether the bacteria are normal to the infant's intestine or are pathogenic invaders. Fritz Talbot advises that in the study of fat digestion one uses a Fuschin stain as well as Sudan. The latter does not stain neutral fats, but stains fatty acids brilliant red, and soaps dull red, while the Sudan though it does not stain soaps, stains fatty acids indifferently and dyes the neutral fats a bright red.

The reaction of stools to moist litmus paper should always be observed; very acid stools almost always mean excess of sugar in the food, the evacuations of a normal breast-fed child give an acid reaction while those of the healthy bottle-fed baby give an alkaline reaction. When a stool is exceedingly alkaline in reaction it means an excess of proteid in the food with albuminous putrefaction. A study of the odor of stools may give valuable information. A butyric odor usually means fat decomposition; a lactic or an acetic odor, carbohydrate fermentation, while the stools of proteid decomposition have a disagreeable putrefactive smell.

Among the first American physicians to attempt rational modification of milk was Meigs of Philadelphia. His method was based on the idea that mother's milk was the optimum for the infant, and that cow's milk should be made identical with it. This he attempted to do by dilution and the addition of cream and sugar. In the light of what was then known of physiological chemistry this plan seemed to promise a fairly reasonable approximation to woman's milk. In the hands of Meigs and his followers it succeeded so much better than the rule of thumb methods previously in vogue, that it immediately impressed the profession and became the cornerstone of infant feeding. Following this, American physicians attempted to devise a plan by which milk could be more accurately modified. One of the reasons that the method was not more successful was that the foremost apostles of this doctrine, were so impressed with the principle that guided Meigs that they laid too much stress on the need for high fat percentages in infant food mixtures, for the reason that human milk was supposed to be rich in fat. However, much good followed the interest thus aroused in methods of feeding. Another reason for failure was the insistence on too frequent feedings; as many as eight to ten in twenty-four hours were advised. This vicious plan was adopted as a guide even to the number of daily feedings a breast-fed baby should have, to the detriment of the nursing mother and the production of much indigestion in the infant. It can be said in passing that much of the colic and discomfort which affect breast-fed children during the first month and many of the so-called curdy stools which occur at this period are due solely to an excessive number of feedings. A third drawback to the percentage system as then taught was that its devotees dwelt so insistently on the value of very slight modifications in the proportions of fat, proteid and sugar that it was almost impossible for a physician not a trained mathematician, to follow the literature on the subject. Since that time many simple methods for determining percentages have been devised and less stress has been laid on minute variations. One other objection to the plan was that many of the formulae called for market cream which is for the most part a mixture of bacteria, starch, tallow and milk with more or less boric acid or formalin. But by far its greatest defect was the fact that its proponents in devising formulae considered neither nutrition nor metabolism and much of the disturbance created by the food of bottle-fed infants arises from metabolic disturbances which in turn are responsible for a vast amount of seeming indigestion. There is no question but that the principles of percentage feeding should always be kept in mind, as a guide to the concentrations of food best endured by artificially-fed infants, but to be guided merely by a consideration of the percentages in a food mixture without accurately checking up the albumin and energy needs of the child may lead to failure.

Although the followers of the percentage system have always taught that milk curd was most difficult of digestion, proteid in reality is the proximate principle in milk mixtures which seems to give the least trouble. However, one would be loath to accept the teachings of some of the Germans, that an excess of proteid in an infant's diet can always be ignored. Undoubtedly, some infants are severely injured by excessive proteid feeding. In such instances it is usually the casein that is troublesome, and if such children are given whey mixtures, low in casein, they will immediately improve. The clinical picture is one of an uncomfortable child who does not vomit, but has definite gastric distress; in many instances nurses and mothers interpret this distress to be hunger with the result that the child is still further overfed. The stools of such infants are pale yellow or white, rather sticky, with a putrefactive odor quite unlike the stench of the fatty acids contained in the stools of fat indigestion. By this odor also they can be differentiated from the inodorous

white soap stools so often the cause of constipation in fat overfeeding.

There is undoubtedly virtue in the principle of maintaining a balance between the fat and proteid proportions in the milk, and mixtures containing twice as much fat as proteid, providing they are given in proper dilutions and are reinforced by proper amounts of proteid in cereal decoctions (especially if the latter be dextrinized) are well tolerated and children thrive on them. 2½% of fat and 1¼% of proteid with 6% of carbohydrate is a good combination, if the 24-hour ration is proper. The top 16 ounces of the average bottle of certified milk will contain approximately twice the fat of the whole milk or between 7 and 8%. The same 16 ounces will run about half so high in proteid. The difficulty with this mixture lies in the fact that as the infant grows its proteid requirements outrun its fat needs, and the child gets too much fat and too little albumin. However, in the earliest months of life such mixtures are not at all inappropriate.

For many years Jacobi of New York was the only eminent pediatrist in this country who strenuously objected to what he called "The Gospel of Top Milk." He has clung persistently to milk dilutions, but he never went so far as some of the Germans in the matter of neglecting casein digestion, and we find that in many of his earlier writings there are discussions of the use of gelatin and he has always insisted on the value of cereal decoctions as milk modifiers; an interesting demonstration of how shrewd clinicians often anticipate scientific demonstration. As has been said, both gelatin and cereal decoctions are now known to be protective colloids which insure the proper coagulation of cow's milk in response to rennin.

While the Americans were working, attempting to approximate cow milk mixtures to mother's milk, Voit and Rubner had worked out the food needs, the albumin needs, and the heat demands of the adult, and had investigated the caloric values of different foodstuffs. Assuming as the unit of energy value the large calorie, that is the amount of heat necessary to raise one liter of water through one degree centigrade, these physiologists showed that there was a specific heat value for each type of food, when burned in the calorimeter. The heat value of one gram of fat was determined to be 9.3 calories. Equal amounts of proteid of carbohydrate gave off but 4.1 calories per gram so these figures were taken by physiologists to express the energy values of the respective foodstuffs.

There now arose a German school of pediatrists, among them being Kamerer, Czerny and Kellar, who attempted to determine the food needs of infants. From their work they laid down the axiom that an infant in the first three months of its life needs from 100 to 110 calories per kilogram per day, that is between 40 and 45 to the pound. In the second three months the demands were found to run between 35 and 40 calories per pound and after the sixth month 32 calories per pound of body weight were found sufficient. It was further shown that a thin baby wastes body heat and has need of a higher caloric content in its food than a fat child of equal weight.

(To be concluded in the November issue.)

A CASE OF CARCINOMA OF THE APPENDIX.

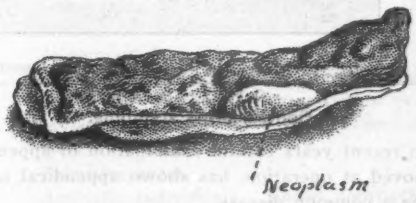
By H. A. L. RYFKOGEL, M. D., San Francisco.

Though many cases of carcinoma of the appendix have been reported, it still seems proper to put additional cases on record.

Miss S., referred to me for operation by Dr. J. W. Shiels, on June 24, 1910, age 22, American, unmarried, states that three years ago she enjoyed good health. Since then she has suffered severe pain before and during her menstrual flow, which though regular, is scant at the beginning but abundant at the end. In March, 1910, an additional pain in the right side appeared during her period, and has since remained in the intervals as well. Frequently sharp pains shoot upward toward the navel from this area of discomfort. She finds she is much more comfortable when her right leg is flexed upon her abdomen. Sitting up is associated with an increase of pain, while the prone position gives relief. She has lost about ten pounds in three months. She has no cough, no fever, no headache, is highly nervous, habitually constipated and has a slight vaginal discharge. Her family history is unimportant. At the beginning of her menstrual difficulties, she suffered from attacks of dyspepsia, which occurred always at the time of menstruation, and were so severe that she was obliged to go to bed.

General examination shows nothing noteworthy. At McBurney's point there is an area acutely sensitive on pressure. There is a definite muscular rigidity over the whole quadrant. Vaginal examination shows uterus and tubes to be very sensitive but is otherwise negative. On July 29th, I removed a somewhat

Fig. 1.



Appendix opened longitudinally, exposing the mucosa and the neoplasm within the lumen.

thickened and adherent appendix about three inches long. Cysts with thin walls were found on both ovaries and resected. The result of the examination of the appendix is as follows:

The specimen consisted of an appendix about 6 cm. in length, which had been opened longitudinally before delivery to laboratory. At about the middle third of the organ a neoplasm was found, firm to the touch, pale pink in color, about the size of a white bean and microscopically did not seem to invade the muscular tunics of the organ. The mucosa was slightly congested above and below the new growth. No enteroliths were present. Fig. 1 shows the organ as opened longitudinally exposing the neoplasm within the lumen.

A section was taken through the tumor at its distal end comprising a portion of the neoplasmic mass as well as the uninvolved mucosa and underlying in-

tegers of the appendix. Sectioned in celloidin and stained in hemotox and eosin, this preparation gave the following microscopic findings, as illustrated in Fig. 2:

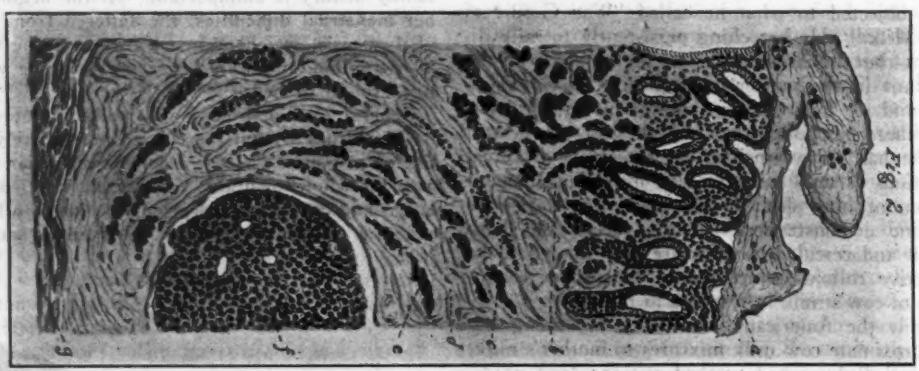
The epithelial layer on the free surface of the mucosa is deficient in places, as shown at **a**. Most of the glands conform to the normal type, but occasionally their epithelium changes from the cylindrical to the cuboid form, as indicated by **b**. These cuboid cells follow in a general way the lymph spaces, as shown at **e**. In the neighborhood of the new growth the areolar tissue has practically disappeared being supplanted by dense fibrous tissue, this condition is pointed out by **d**. In the interstices of the new formed fibrous tissue collections of lymphoid cells are found, as at **c**. Deeper in the preparation well circumscribed areas of polygonal cells are met with, as indicated by **f**. The neoplasmic cells do not invade the musculature of the organ, the latter being shown at **g**.

In other sections examined the lymph follicles were found well preserved, and the areolar tissue present without any neoplasmic involvement.

been about as long as a bean. Extension to the cecom has been seen in very few of these cases.

LeConte has reported glandular metastases in one case. The appendix was extensively involved, and invaginated into the cecom, and the growth involved the cecal wall at its junction with the appendix to a very limited extent. At a second operation performed shortly after the first, the cecal part of the ileum and the ileo cecal glands were removed. Two out of eleven glands showed metastases. The majority of these little tumors show a definite capsule. They are located at the tip in one-half of the cases.

The average age of the patient is 29, and they are much more frequently found in the female than in the male. Their occurrence bears a definite relation to chronic inflammation and obliteration of the appendix, thus in the Mayo series, although cancer was found only once in each 227 cases of all kinds, it was found once in each 53 partially and totally obliterated appendices. Clinical symptoms have at times been absent, and the growth found accidently after the appendix had been removed in the course of an operation undertaken for other purposes. More



Microscopical section of neoplasm of appendix.

Conclusion: Carcinoma.

In recent years careful examination of appendices removed at operation, has shown appendical cancer to be a common disease.

The largest series has been that of the Mayos, reported by McCarthy and McGrath, who found 22 instances of these neoplasms in 5000 specimens.

The first case was reported by Merling in 1838, and since then nearly 200 cases have been placed on record. The variety has usually been carcinoma, although a few cases of sarcoma and a few of endothelioma have been reported. The type of carcinoma in the greater majority has been the spheroidal celled, although a few cases of the columnar celled have been observed. The assertion has been made that the latter usually occurs in patients over 50, and is very prone to extend to surrounding structures and form metastases. The spheroidal celled type on the contrary, occurs in young people and resembles the basal celled cancers of the skin in its very slight tendency to metastasize, and its extraordinary slow growth, the largest found having been about the size of an ovary and varying from that to microscopic size. Usually these found have usually, symptoms are present, but differ in no way from those of chronic appendicitis, and no case has been reported in which pre-operative diagnosis of cancer has been made. In three-fourths of the cases a surgical diagnosis could not be made after the abdomen was opened, because the growth had not grown through to the serosa.

The spheroidal celled carcinomata are unique among those of the intestinal tract for their slight tendency to invade the surrounding tissues, and practical absence of metastatic tendency. The prognosis is therefore excellent, recurrence having practically never occurred. No satisfactory explanation of this characteristic of appendiceal carcinoma has been offered.

Ribbert has suggested that the process is due to chronic inflammation snaring off epithelial cells which then proliferate in such a way as to resemble carcinoma.

It has been claimed that in some cases the picture is due to an infectious lymphangitis, while others attribute the apparent cessation in growth of these neoplasms to the vestigeal character of the appendix, and still others assert that the growths slough early and spontaneous cure occurs.

TENTATIVE CLASSIFICATION OF EXCEPTIONAL CHILDREN.

By MAXIMILIAN P. E. GROSZMANN, Pd. D., Plainfield, N. J., May, 1909, Educational Director of the National Association for the Study and Education of Exceptional Children.

A. Normal Children.
(Those who are in accord with the norm, or standard, of human nature.)
1. Typical Children.
(Those who conform to the average human type, representing the present stage of civilization.)
2. Pseudo-atypical Children.
(Those who only seemingly deviate from the average human type.)
a. Children Whose Progress in School was hindered by:
1. Change of schools;
2. Slower rate of development, without atypical retardation;
3. Temporary illness;
4. Slight physical difficulties, such as lameness and minor deformities, slightly impaired vision and hearing, adenoid vegetations, etc. This last class is similar to Group 2, of the Pathological Classes, Subnormal Group; only that it represents **retarded** instead of **arrested** development.
b. Children of Unusually Rapid Development. without genuine (pathological) precocity ("bright" children).
c. Children Who are Difficult of Management. Naughty, troublesome, spoiled children, without genuine perversity.
d. Neglected Children.
Pseudo-atypical children may be rapidly restored to normal equilibrium.
3. Atypical Children Proper.
(Those who deviate from the average human type.)
Hereditary, congenital, and environmental causes.
a. Neurotic and Neurasthenic Children.
Over-stimulation and precocity. Genius. Irritability. Excessive imagination and lack of mental and emotional poise. Hysteria (Dementia Praecox). Lack of concentration. Negativism. Contrariness. Perverse tendencies. Sexual precocity. Fears and obsessions. Defective inhibition. Tic. Motor disturbances. Vasomoter, sensory, and trophic disturbances.
b. Children of Pathologically Retarded Development.
Impaired conceptual ability due to retarded brain development. Physiological retardation of growth rate. Special physical causes: Chronic catarrh, chronic difficulties of nutrition, serious chronic affections of vision and hearing, venereal infection, etc.
Any of these classes, through neglect or adverse environmental influences, may drop down in the scale of development, into lower classes. In other words, the individuals composing them, may lose their normal characteristics and degenerate into permanent defectiveness. It is a matter of potentials and their direction. On the other hand, having the normal potentials, atypical and pseudo-atypical children may be restored to normal equilibrium.

B. Subnormal Children.
(Those whose potentials are incomplete, or underdeveloped.
1. Defective Children.
Hereditary and congenital causes.
Epileptics, blind, deaf and dumb, deformed, paralytics, crippled, etc.
These children can never attain the perfect norm of human nature, as their potentials are incomplete.
2. Children of Arrested Development.
(Acquired abnormality or defectiveness.)
a. Pathological Classes.
Children born apparently normal, but having their development checked by:
1. Hereditary causes, manifesting themselves at certain developmental periods;
2. Special causes, as diseases, fright, accidents, etc.
The arrest of development may be only partial, as in the case of children deformed by accident; then, there will be mainly a condition of incompleteness, as in Group 1, Defective Children.
b. Submerged Classes.
Environmental influences have prevented them from attaining full maturity.
Children of arrested development will remain essentially subnormal, no matter how well they may be educated within their limits.
3. Children of Rudimentary or Atavistic Development.
The primitive type, representing mental, moral and social instincts and activities on the savage, barbarian, or generally uncivilized level.
Primitive races.
Atavistic individuals. These approach the abnormal level. They represent a reversion of instincts and capacities in spite of being born from apparently normal parents.

Groups A and B Constitute Human Society.

C. Abnormal Children.
(Those who deviate from the norm, or standard, of human nature.)
Hereditary and congenital causes.
Cretins, cretinoids; microcephalics, macrocephalics, hydrocephalics; idiots, idioimbeciles, imbeciles and feeble-minded; insane; criminals; moral imbeciles and moral perverts.
Abnormal children stand outside of human society and require custodial or institutional care permanently.

DEFINITIONS.
(Standard Dictionary.)
Norm: A rule or authoritative standard.

Normal: According to an established law or principle; conformed to a type or standard; regular or natural.

Abnormal: Deviating from the natural structure, condition, or course; unnatural.

Type: One of a class or group of objects that embodies the characteristic of the group or class; an example, model, representative, or pattern, as of an age, a school, or a stage of civilization.

Typical: Having the nature or character of a type.

MENTAL TEST.

PHYSIC-PSYCHOLOGICAL AND MENTAL TESTS FOR CHILDREN.

By MAXIMILIAN P. E. GROSZMANN, Pd. D.,
Plainfield, N. J.

Arranged for four periods of child age, as based on a revised Culture Epoch division of development.

Primary Period: (the "human animal"), meaning the human species as differentiating itself from the lower creation; omitting babyhood, this period covers the years from 3 to 5.

Elementary Period (race period), meaning that race characteristics are evolving from the general human potentials. Age, 6 to 11.

Intermediate period (nation period, pubescent period). Age, 12 to 15.

Advanced Period (family and individual period). Age, 15 and up.

Primary Period.

Physic Psychological Tests: Special Senses, Visual:

Distance and Accuracy:

1. Snellen's Test Cards: pictures.
2. Prof. Cohn's E-fork.

Color:

1. Matching colored worsted; primary colors only.
2. Naming 6 primary colors: red, orange, yellow, green, blue, purple (violet). The underlined names (as well as colors themselves in (1) are the first to be distinguished and named).

Aural: Distance and Direction: Cf: Physiological tests. Child (blindfolded) should be asked to follow the sound of a bell, or a call, now loud, now low, as in a game.

Testile: Tests in identifying ball, key, paper, goods, etc.

Smell: Recognizing soap, fresh bread, flowers, etc.

Taste: Recognition of sugar, salt, bread, fruit.

Mental Tests: Naming familiar objects in room, outdoors, from pictures.

Note facility, range, substitution.

Counting:

1. Put two heaps of sticks before the child, one containing 3, the other 12 sticks. Which is the larger heap?
2. Counting as far as child can count.
3. Abacus: (5 rows of 10 beads each). Move beads in each row (different colors) one by one and count at the same time.

Following Direction: Give child a simple direction, such as: Hand me the book from the table! or, open the door! and observe with what willingness and promptness it is carried out.

Imitation: Make some motion with your hand, like waving; or, take a hammer and strike a nail, and have child repeat the action.

Imaginative Imitation: Tell child to show in what manner mother cooks breakfast; or father smokes, or chops wood; or the gardener sows his seed, etc. Take example from child's natural circle of observation.

Story Telling:

1. Have child repeat a story, as Red Riding Hood (it must be new to the child), as told by the experimenter.
2. Give doll, or play-horse, to child. Have him play with it and tell imaginative happenings.

Judgment:

1. Simple picture cut into four squares; reconstruct.
2. Which of two lines is the longer? (Binet.)

Expression:

1. Drawing of conventional and life forms through ground glass.
2. Draw freehand, a man, a horse, a house, from memory.
3. Model some familiar form (ball, bird's nest, flower pot) from memory.
4. Draw a pond, with trees standing in front and back.
5. Sing a song.
6. Recite some piece of poetry.

Elementary Period.

Physic-Psychological Tests: Visual:

Distance and Accuracy: Snellen's Test Cards.

Color:

1. Matching of primary colors, and at least one tint and one shade, in colored papers mounted on cards to be fitted together.
2. Naming these colors, also light and lighter, dark and darker.

Visual Memory:

1. Holding up to child's eyes colored papers (or objects, like balls) in the following order:
   a. Red, blue, yellow;
   b. Red, blue, green, yellow;
   c. Red, green, orange, blue, yellow;
   d. Red, orange, green, yellow, blue, violet; each series about 10 seconds, and having child repeat order in which colors were seen.
2. Holding up familiar objects and having child repeat names in order given:
   a. Ball, book, chalk;
   b. Fork, knife, spoon, napkin;
   c. Hammer, bottle, chalk, key, ruler;
   d. Combine a and b.
   e. Combine c and b. The different series correspond in a measure with the ascending ages of the child.

Aural:

1. For distance and direction, use same tests as in Primary. But at this age have the child (blindfolded) tell:
   a. Character of sound (bell, tapping, knocking, scraping, words spoken, etc.);
   b. From where the sound comes;

c. How far away it is. This latter experiment should include discrimination of distance with different degrees of loudness.

2. Have child repeat tone sung, or produced on instrument.
3. Discrimination of higher and lower tones from standard, c. Each tone is to be individually compared.
   d e g b c f a d c f
4. Sense of rythm (hearing and motor).
   Tapping by experimenter and child in unison, at various rates of speed; tapping by child alone after standard given memory. Eventually use metronome.
5. Memory: Tell (or write) from memory the following selection after it has been read by experimenter:
   A Corn Field: A corn-field in July is a hot place. The soil is hot and dry; the wind comes across the lazily murmering leaves laden with a warm sickening smell drawn from the rapidly growing corn. The sun, nearly vertical, drops a flood of dazzling light and heat upon the field over which the cool shadows run, only to make the heat seem more intense. (Garland.)
   (Mark the number of memories.)
   (Cf test in writing and reading)

Tactile:

1. Simple tests in identifying objects (pencil, brush, ball, knife, coin, etc.) and solids (ball, cube, cylinder).
2. Singles and double needle-points, using distances of two to one inch, pricking skin in various body areas, to recognize points. Or use algometer.

Smell:

1. Elementary tests with ordinary strength of vinegar, ground coffee, soap, earth, fruits, flowers, perfumes, etc.
2. Graduated tests for acuteness: Use graduated extracts, of musk, violet, ammonia, orange, etc., varying between .001% and 100%.

Taste:

1. Elementary tests with ordinary strength of sugar, quinin, vinegar, salt, coffee, bread, chocolate, fruits, vegetables, etc.
2. Graduated tests for acuteness: Use graduated solutions of sugar, quinin, vinegar and salt, varying between .001% and 100%. Mark first traces of sweet, bitter, sour, salt.

Location:

1. Point out some object in room. Then blindfold child and ask him to walk towards the object.
2. Have the child walk several times from door to window; then blindfold him and have him retrace his steps in that way (muscular memory).

Mental Tests: Counting:

1. Counting as far as child can count.
2. Counting backwards, 10-1.
3. Counting by 2's as far as child can go.
4. Counting backward by 2's; 10-2, 20-2.
5. Counting by 10's to 100.
6. Counting backward by 10's: 100-2.
7. Counting by 6's as far as child can go, at least 50.
8. Counting backward by 5's: 50-5. 100-5.
9. Counting by 3's, to 30, 60, 90, 120.
10. Abacus:
    a. Move red beads 2 by 2.
    b. Move orange beads 3 by 3. How many left?
    c. Move yellow beads, 1, 2, 3, 5.
    d. Move green beads, 4 and 4. How many left?
    e. Divide blue beads in half. How many in each half?
    f. How many times can you move 2 red beads?
       Five times 2 is?

Following Direction: Give the child some direction which would involve two different actions successively, e. g., tell the child to lock the door and bring you the key; or, to raise arms over his head and then lower them behind his back, etc.

Association:

a. Presentation of familiar objects (apple, knife, pocket book). Child is asked to dictate to the experimenter the names of other objects coming to his mind as suggested by the object presented, as fast as possible, in three minutes.
b. The same exercise, except that the name of a familiar object (book, mother, house) is mentioned to the child.
c. Genus—Species: Tell an animal, plant, food, article of clothing, piece of furniture.
d. Part—Whole: Tell of what the following is a part: an arm, a sleeve, a drawer, a leaf, a room.
e. Opposites: What is the opposite of bad, short, little, poor, well, thick, full, few?
f. Qualities: Tell me something that is high, cold, new, smooth, red, round, clean, bitter, heavy.
g. Activities: Tell me the name of something that walks, rolls, flies, barks, swims.

Reading:

1. Reading of graded passages from some good series of readers, First to Fifth Reader. Note facility, expression, understanding, substitution, etc.
2. Have child repeat orally what he has read.

Writing:

1. Dictation of graded passages from same set of readers.
2. Have child repeat in writing what he has read, as nearly as he can reproduce it.

Motor Co-ordination:

1. Walking along straight board or line.
2. Threading of needles very coarse to medium.
3. Tapping (Cf. Rythm Test).
4. Tying and untying of strings (shoestrings).
5. Marking with cross, in lead pencil, 100 squares in their centers. Squares ½ in. Note accuracy and time.
6. Striking graded pegs with metal pencil (electric contact). Note accuracy and speed.

   By repeating these tests up to 10 times in succession, the effect of study and practice can be studied.

Judgment (Experience):

1. Muscular and optical illusions:
   a. Two pieces of wood of different size but equal weights.
   b. White circle on black background; which appears larger? (Circle of about 2 inches observed from distance of 10 feet in good illumination.)
2. Dissected pictures:
   a. Simple picture cut into 8 oblongs.
   b. Simple picture cut into 12 pieces of different forms. (This test may be done imperfectly by some children of this

stage; it ought to be done perfectly in the next stage.

3. Formboard: 12 different geometric forms to be fitted into their grooves. Note time and accuracy.

This test should be tried with elementary children, but will be more perfectly done by children of next stage.

Expression:

1. Draw, on transparent slate, life forms after patterns.
2. Draw, freehand, a man, a horse, a house, from memory.
3. Paint with ink, or watercolor, an apple, a flower, a vase, a model.
4. Model some familiar form (ball, bird's nest, flower pot) from memory.
5. Draw the following: an oblong pond with trees standing in front and back.
6. Draw the following: on the side of a street a shoemaker is at work at his bench, on the opposite side is a carpenter building a house.
7. Child to sing a song he knows, eventually with accompaniment.
8. Child to play a piece on whatever instrument he can play.
9. Child to recite any piece of poetry he has learned and happened to remember.

Aesthetic:

1. Color preference.
2. Favorite flower.
3. Favorite song or musical piece.

Intermediate Period.

Physic-Psycological Tests:

Vision: Distance and Accuracy: Snellen's Test Cards. Tests for astigmatism.

Color: Matching of intermediate colors and naming them as accurately as child can describe them.

Visual Memory:

1. Drawing successively 10 straight lines after standard (4 in. long). The standard is drawn on top of paper, and is removed from sight by folding under, after being exposed 5 sec. Each copy is likewise folded under before next is attempted. Mark extremes and m. v.
2. Momentary exposure of 12 familiar objects successively, the child writing down the names after all objects have been shown. Mark completeness and order.
   - First Series: Hammer, ball, bottle, chalk, fork, bell, key, clock, book, mat, ruler, box.
   - Second Series: Newspaper, rubber eraser, pack of cards, hat, pad, plane, knife, worsted, comb, scissors, pictre, envelope.
3. Exposing familiar words to be written down from memory in the order shown, after having been exposed 5 times (underlined words in red ink):
   - First Series: Cow, room, ship, queen, hammer.
   - Second Series: Road, glass, board, bell, pencil, water.
   - Third Series: Garden, stone, grass, dog, bottle, hill, wall.
   - Fourth Series: House, statue, paint, ink, door, picture, cloud, tree.
   - Fifth Series: Paper, roof, sky, pen, leaf, hammer, cow, ship, bottle, door.

Hearing:

1. Recalling and recognizing single tone (use special string instrument).
2. Discrimination of higher and lower tones as in 3, Elementary. Standard c:
   b, d-sharp, b-flat, d, a, e, g, b, c-sharp.
3. Consciousness of harmony and discord (selected chords).
4. Memory of spoken unrelated words: Familiar words by the experimenter to be repeated orally, or in writing, in order given. Mark completeness, order, time. Present 5 times.
   - First Series: Room, sky, stone, ink, garden.
   - Second Series: Queen, water, pen, wall, pencil, glass.
   - Third Series: Tree, grass, door, board, road, cow, ship.
   - Fourth Series: House, cloud, leaf, paint, roof, picture, dog, hammer.
   - Fifth Series: Leaf, paper, hammer, dog, bottle, statue, picture, hill, roof, paint.
5. Memory of spoken related words. Method same as in 4.
   - First Series: Home, father, city, business, office.
   - Second Series: Mother, dinner, meat, fork, napkin, dishes, table, chair.
   - Third Series: Country, woods, tree, grass, moss, flowers, grass, picnic.
   - Fourth Series: Water, lake, river, ocean, steamer, trip, England, London, Germany, Berlin, Kaiser, America, Star-spangled banner.
6. Memory of word picture. The purely ear-minded child will respond to the reading of the selection by experimenter; another method is to have the child read the selection aloud, thus combining visual and motor memories with the aural (hearing his own voice). Selection may be read twice, or even three times in succession, and a combination of both methods is allowable if response to one is unsatisfactory. Child to repeat, or reproduce in writing.

   Ploughing: All day long the ploughmen on their prairie farms have moved to and fro on the wide level field through the falling snow which melted as it fell, wetting them to the skin—all day, notwithstanding the frequent squalls of snow, the cripping, desolate clouds, and the muck of the furrows, black and tenacious as tar.

   Under their dripping harness the horses swung to and fro silently, with that marvelous uncomplaining patience which marks the horse. The ploughman behind his plough, the snow lay on his ragged great-coat, and the cold, clinging mud rose on his heavy boots, whistled in the very beard of the gale.

   As the day passed, the snow, ceasing to melt, lay along the ploughed land and lodged in the depth of the stubble, till on each slow round the last furrow stood out black and shining as jet between the ploughed land and the gray stubble. (Garland.) Mark number of memories.

Touch: Tests in identifying objects and solids (blindfolded) as pen points, small keys, marbles, various fabrics, flat and solid geometric figures as triangles, ovals, vases, etc.

2. Single and double needle-points, using distances of from 1 to ¼ in., testing various body areas. Or use algometer.

Smell: Acuteness. Use graduated extracts as in Elementary tests.

Taste: Acuteness. Use graduated solutions as in Elementary tests.

Location: Memory; visualization. Draw ground floor of your school-room, or of some room in your dwelling house (bedroom, dining room, etc.) from memory.

Mental Tests.

Counting:

1. Count as far as you can count. After 200, count by 10's; after 300, count by hundreds; after 2000, count by thousands.
2. Count backward, 100-1.
3. Count backward, by 2's, 100-2.
4. Count backward by 3's: 12-3, 30-3, 90-3.
5. Count backward by 5's: 200-5.
6. Abacus: Make on left side of abacus, 8, 12, 18, 25, 31, 39, 44, 50.

Association:

1. Presentation of familiar object; child is asked to write down the names of other objects or ideas coming to his mind as suggested by the object presented, as fast as possible, in three minutes.
2. Same exercise, except that the name of the object is mentioned to the child without the object being shown.
3. Genus—Species: Tell a form of land; kind of building; occupation; game; exercise.
4. Part—Whole: Tell of what the following is a part; a seam, a handle, a wall, a signature, a title.
5. Opposites: What is the opposite of: bad, inside, slow, short, little, soft, black, dark, sad, true, dislike, poor, well, sorry, thick, full, peace, few, below, enemy. (Nosworthy list.)
6. Qualities: Tell something that is: high, soft, cold, new, smooth, red, round, windy, clean, bent, wooden, deep, empty, loose, narrow, bitter, level, stale, oily, heavy, woolen. (Nosworthy list.)

Following Directions: Give child some direction which would involve three or four different activities in succession, e. g., tell the child to place a book on the desk; then to walk to the window, to open (or close) it, and then to bring the book back to you, and open it on page 105.

Reading and Composition:

1. Reading of graded passages from some good series of readers, Sixth to Eighth, and of simple classics. Note facility, expression, understanding, etc.
2. Have the child write a reproduction of the passage read. (This exercise must not be confused with the word picture test.)

Concentration: Striking out 100 A's scattered through block of letters.

By repeating this test 10 times in succession, the effect of habit and practice can be studied. Accuracy and speed are noted.

Motor-Co-ordination:

1. Striking 100 dots with pencil successively. Dots are ½ in. apart, arranged in ten rows of ten each.
2. Striking graded pegs with metal pencil (electric contact).

Note accuracy and speed. Repeat 10 times for effect of habit and practice.

Method of Thinking: Presentation of familiar object (knife, fork, penny, ball, flower, etc.): Child tells what primary association is formed, that is to say, of what the child thinks first when object is seen (idea of object as such, or sound of spoken word, or image of written or printed word, its spelling, letter forms, color of object, etc.)

Judgment (Experience):

1. Muscular Illusions:
   a. Pencil point between twisted fingers.
   b. Eight weights of different sizes, but equal weights.
2. Optical Illusions (cf. James, Psychology, 11, 232, ff.)
3. Connect 100 dots (½ in. apart, arranged in 10 rows of 10 each) with continuous line without touching the same dot twice or crossing over. Repetition introduces effect of habit and practice. Time.
4. Simple picture cut into 12 pieces of different forms. Time.
5. Set of cubes presenting six different pictures. How many are recognized and put together? Time.
6. Jig-saw puzzle of not more than twenty-five pieces. Time.
7. Formboard.
8. Solving of some puzzle or riddle, e. g., several geese are walking along the road in single file. One walks ahead of two, one walks behind two, and one walks in the middle. How many geese?
9. A practical question as to what the child would do under certain circumstances, e. g., if he would see another child walking unconsciously near a steep precipice where another step might cause it to fall off, and yet if frightened by some sudden call, the child may be in the same danger.
10. A practical test, such as placing a book so near the edge of the table that an inadvertent motion would send it to the floor; or, the playing of some game of cards in which judgment is needed, like "building" in Casino, or a game of Hearts.
11. Games like Twenty Questions, City and County, etc., also offer valuable opportunities for tests of judgment, concentration, etc.

Expression:

1. Draw freehand, a man, a horse, a house, from memory. At this stage, some specific man, (father), or horse, (the grocer's or the family horse), or house (residence, or schoolhouse) should form the task.
2. Paint, in watercolor, some flower, vase, landscape, from memory, or by way of invention and composition.
3. Model, in clay, some motive of ornament.
4. Draw an oblong pond, with trees on opposite sides, front and back.
5. Shoemaker and carpenter, as in elementary test.
6. Child to sing a song he knows.
7. Playing on whatever instrument he can play.
8. Recitation of memorized piece of poetry or oratory.

Aesthetic:

1. Color preference.
2. Favorite flower.
3. Favorite song or musical piece.
4. Favorite poem or story, literary piece, author.

Advanced Period.

Physic-Psychological Tests: Visual Memory:

1. Momentarily presenting sheet containing rectangles of same size, but different colors and in different positions. Upon withdrawing sheet, child is to draw a diagram of the positions and the names of the colors in their proper places. Repeat three times.
2. Same test as under (3) Intermediate. Children of this age should be able to repeat Fifth Series without mistake.
3. Exposing nonsense syllables in same way as familiar words in previous tests:
   First Series: Juc, ver, dil, zec, nis.
   Second Series: Lab, noh, ris, lup, fim, tup.
   Third Series: Zit, tal, gip, fod, kan, mas, zam.
   Fourth Series: Arb, cul, tab, sar, sal, cof, ler, hek.
   Fifth Series: Bom, wes, rar, nis, zec, lup, tup, noh, hek, lab.
4. Estimates of distances, as to comparative length. Younger pupils may be able only to say that one distance is greater than the other; older ones may estimate actual length in feet, miles, rods.
5. Estimate of heights of various objects. Same method as in 4.
6. Estimate of sizes of various objects. Same as before.

Aural:

1. Recalling and recognizing chords (selected chords).
2. Memory of word picture, as in (6) Intermediate:
   Early Dutch Fireplace Scene: To have seen a numerous household assembled around the fire, one would have imagined that he was transported back to those happy days of primeval simplicity which float before our imaginations like golden

visions. The fire places were of a truly patriarchal magnitude, where the whole family, old and young, master and servant, black and white, nay, even the cat and dog, enjoyed a community of privilege, and each had a right to a corner. Here the old burgher would sit in perfect silence, puffing his pipe, looking into the fire with half-shut eyes, and thinking of nothing for hours together; the good wife, on the opposite side, would employ herself diligently in spinning yarn or knitting stockings, listening with breathless attention to some ole crone of a negro who was the oracle of the family and who, perched like a raven in the corner of the chimney, would croak forth for a long winter afternoon a string of incredible stories about New England witches, grisly ghosts, horses without heads, and hair-breadth escapes and bloody encounters among the Indians. (Irving.)

Tactile: Single and double needle-points, distance down ½ in. Also use algometer.

Smell: Graded extracts as in previous tests. Also present aqua distillata for contrast, and for test of suggestion.

Taste: Graded solutions as before. Also use pure water.

Location: Memory; visualization. Draw ground floor of a familiar building.

Mental Tests.

Association:
1. Genus: Tell—virtue, a state of mind, a state of body, a purpose, and an ideal.
2. Part—Whole: Of what is the following a part: a teacher, a soldier, a sailor, a word, a paragraph?

Reading: A selection from some classic author.

Composition: Have pupil write his autobiography.

Concentration: 100 A's.

Motor Co-ordination:
1. Striking graded pegs with metal pencil (electric contact).
2. Threading fine needles.

Method of Thinking: Same as under Intermediate.

Judgment (Experience):
1. Muscular and optical illusions. Same as under Intermediate.
2. Connecting 100 dots.
3. Jig-saw puzzles of graded number of pieces.
4. Geometric puzzles like the Anchor Puzzle (8).
5. Puzzle or riddle, like under Intermediate (8).
6. Practical question like under Intermediate (9).
7. A game of checkers, chess, Twenty Questions, etc.

Expression:
1. Draw from memory, or from model (living model) a portrait, or life study.
2. Paint some still life.
3. Model some ornament.
4. Draw or paint some landscape, from nature, or by way of composition.
5. Some song with accompaniment.
6. Playing on some instrument.
7. Recitation of some memorized poetry or oratory.
8. Spontaneous discussion of some familiar theme, as, e. g., the War of the Revolution and its Causes, or Fashions of the Day; or, the Advantages and Disadvantages of Traveling.

Aesthetic:
1. Color preference.
2. Favorite flower.
3. Favorite song or musical piece.
4. Favorite poem, story, literary piece, author.
5. Selecting most pleasing oblong (Golden Section).
6. Selecting most pleasing ellipse (Golden Section).

Remarks:

These series of tests are tentative and experimental. A more definite system can be established only after testing out these suggestions, also in comparison, perhaps, of the Binet tests, with a large number of children.

They have been in part compiled from previous work of a similar kind, as done in psychological laboratories; but such selections have been adapted to the present purpose, and graded as best as our knowledge of child nature would allow. In part, these tests are original with the author. And certainly, the arrangement and plan of the whole is new.

Whether the grading is in every instance correct will have to be investigated. It may, e. g., be suggested by some that younger children may more easily rely on the mechanical memory, and that therefore the nonsense syllable test which has been placed in the Advanced group, ought to change place with the Familiar word test as suggested for the Intermediate group. Again, the test with aqua distillata, for contrast in the smell tests, and for the effect of possible suggestion; and the test with pure water in the taste tests, for the same purpose, have been enumerated only among the tests for the Advanced group. It may be urged that the suggestion part of this test would be more fitly placed in the lower groups as suggestion is stronger with younger children. The author has here reversed the order which may be thought more in harmony with the natural development of the child, for the reason that the object of these tests is rather to examine the child's power to emancipate himself from earlier instincts and tendencies.

The main purpose of these tests is to establish, as far as possible, a measuring scale for the child's ability to grow, to develop, to expand; so that the distinction between arrest and retardation of development can be more safely made.

In applying these tests it is well to remember that a child who is chronologically supposed to be in a higher group, must first give evidence that he has physic-psychologically, and mentally outgrown the lower groups. Therefore, he must master the previous development tests, before he is even tried in his own group. And within each period, when more than one test is presented within any one subject of examination, they are arranged in a tentative ascending scale, so that the different ages within the period may be more exactly determined. Thus, the First Series of such a test is intended more particularly for the first year within this period; the Second Series, for the second year, and so on. Likewise, those tests which are numbered (1), (2), etc., and (a), (b), etc., are arranged to a somewhat ascending scale. However, this scale must not be taken too literally and mechanically, as there are as yet no definite facts to serve as basis or gauge, and we must allow for variations in aptitudes. It may merely be accepted as a guide.

It is obvious that these tests cannot be expected to be made with a child all in one sitting. They will extend over a longer or shorter period of time. Only as much should be done in one examination as can be done without tiring the child. Many of the tests can be presented in the form and at the same time, of play and recreation. Other tests can be made a part of the schoolroom work.

These tests may perhaps, in a measure, be utilized in place of the traditional examinations in the schools, to determine a pupil's maturity for promotion.

In the work of the Groszmann School from the practice of which these tests have been elaborated, the data obtained from them are in the form of additional material for the general record of the pupils. The complete record consists in a searching Child History (statements from the parents and physicians of the child previous to examination in the school) and various measurements and examination and tests, of the anatomical, structural and

functional condition of the child, including body measurements, health and disease records, sense tests, etc., etc.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of August the following meetings were held:

Section on Medicine, Aug. 1st, 1911.

1—Presentation of Causes of Lupus Vulgaris. Harry E. Alderson. Discussed by D. W. Montgomery.

2—Dermatitis Venenata from Proprietary Hair Dye. E. D. Chipman.

3—Report of Dermatological Cases from Proprietary Hair Dye. J. Cameron Pickett. Discussed by Drs. Power, Williams, Montgomery, Alderson, Chipman and Pickett.

4—The Exceptional Child. Maximilian Groszman, M. D., Ph. D. Discussed by Drs. Brown, Porter, Miss Katharine Felton and Dr. Groszman.

General Section, Aug. 8th, 1911.

1—Presentation of a Case of Acute Localized Encephalitis after Whooping Cough; decompression followed by Relief from symptoms. Dr. R. L. Ash.

2—Report of the Committee for the Study of Anterior Poliomyelitis. E. C. Fleischner, Chairman. Discussed by Drs. Hunkin, Porter and Lennon.

3—Nephritis. Martin Fischer. Discussed by Drs. Wilbur, Quinan, Fleischner, Silverberg, Fischer.

Section on Surgery, Aug. 15th, 1911.

1—Improved Technic of Veno-Peritoneostomy for the Relief of Ascites. H. E. Castle. Discussed by Drs. Rosenstirn, Tait and Castle. (Paper to be published in J. A. M. A.)

2—Technic of Abdominal Hysterectomy: Its Methods and their Indications; lantern demonstrations. A. J. Lartigau. Discussed by Drs. Von Hoffman, Somers, McNutt, Kugeler, Hoffman, Rosenstirn, Lartigau.

Presentation of Cases of Lupus Vulgaris.

By HARRY E. ALDERSON, M. D., San Francisco.

These three cases of lupus vulgaris (from my clinic at the Fruit and Flower Mission and the Infants' Shelter) are of interest because each one presents a different phase of the disease and so an opportunity is offered to compare the earliest lesions (as seen in the cases of this little boy and the little girl) with the extensive lesions of long standing (as seen in the adult). It is a striking demonstration of what can develop from a small and apparently benign affair. The adult has had her lupus for over forty years,—it began in infancy as a tiny lesion (as most of these cases do) and developed very slowly and in a characteristic manner until, as you see, it now involves the entire left side of her face and contains a large number of active foci (the typical "apple jelly like" nodules) all through the area. Cicatrization is well marked along its lower border and the ear lobe has been destroyed.

The little boy has on his right cheek a small nonulcerating, half-dime sized patch containing about four characteristic "apple jelly nodules" (of the kind seen in large numbers in the adult). The disease in this case is of about three years' duration. The patient's mother thinks that it came from a cut produced by falling on some scissors on the floor. Tuberculosis cutis originating in such a manner, however, would be more apt to be of the verrucous type.

This little girl shows a dime-sized lesion on the right cheek in the near neighborhood of some cicatrices from old tuberculous glands which had broken down about a year and a half ago. At that time the lupus patch was first observed by the mother, and she states that it has not increased in size. As you can plainly see, there are several of the deep seated nodules present. It is on this feature principally that a diagnosis is usually based.

Two of these patients have given a positive tuberculin reaction and it has not been tried in the other on account of some active glandular involvement.

As for the treatment, a great deal can be said, but it is late and so that phase of the subject will be discussed briefly. All of these patients ought to have tuberculin injections supplemented by X-ray treatment. The adult has been receiving tuberculin and is improving slowly. She will be given radiotherapeutic treatment also. At one time she was given an application of a paste containing pyrogallol, resorcin and salicylic acid for the purpose of producing a reaction and sloughing of the nodules. The reaction was intense and the desired sloughing occurred. When it subsided the area thus treated looked much better. A few more applications of the same ought to produce very marked improvement but the patient objects to such heroic treatment. As soon as her consent is obtained the procedure will be repeated. In the case of the small lesions the best treatment would be complete extirpation of the patch including a zone of the apparently healthy skin surrounding, and also subcutaneous fat beneath the lesion. If done thoroughly the result is good, as I have recently been able to report in the case of one of my patients. This course undoubtedly would prove successful in both the small early lesions here shown, but in neither case can permission be obtained. The boy's lesion looks much better than it did, much of it having been destroyed by freezing. I used the carbon dioxide snow. There are various effective means of destroying the foci but they must be used thoroughly or there surely will be a recurrence. As for the treatment in the case of the little girl,—she has only recently come to me and I have not yet decided what course to pursue. I feel that she ought to be given tuberculin and systematic radiotherapeutic treatment.

Various other means of treatment might be mentioned, but on account of the lateness of the hour and the length of the program it will be impossible to consider them.

Discussion.

Dr. D. W. Montgomery, San Francisco: For such cases as the boy presents extirpation is the best treatment. Lang of Vienna was the first to carry out this treatment extensively, and he showed fine results. I have removed quite a number of lupus patches by total extirpation, but it is marvelous how recurrences will appear after what seems to be the most thorough removal. A woman under my charge had the most obstinate recurrences after repeated operations. As regards the woman shown by Dr. Alderson, where a very large area is involved, it is impossible to remove the diseased tissue by extirpation, as it would require too great denudation of the face. The Finsen light treatment gives excellent results, but it requires such a deal of patience that I hardly think that it can be carried out in any place except Copenhagen. There the people seem to have no nerves, and a girl will manage the machine from morning till night without apparent tire. I do not think that we could here get our nurses to do the work. It is a most wearisome treatment both in its application and in the length of time required; a year and a half or two years is not unusual in the treatment of a small lupus patch, and even then recurrences are not unusual. In its application a little hollow glass tube containing cool running water is held against the patch so as to press out the blood, and it has to be held in such a way that the ray of light will fall at the correct angle and at the correct distance, so as to strike into the lupus patch. The nurses in the Finsen Light Institute do this work seemingly uncomplainingly for hours of a day, and day after day.

Report of Dermatological Cases Caused By a Proprietary Hair Dye.

By J. CAMERON PICKETT, M. D., San Francisco.

I herewith submit a report of some interesting cases of dermatitis venenata, caused by the use of a proprietary hair dye, which have recently come un-

der my observation, as illustrating some of its special phases.

The cases of Mr. and Mrs. J. S. are of more than passing interest because they demonstrate a means by which the disease may be spread. Mr. J. S. consulted me on July the sixth of this year complaining of an erythematous condition about the eyes, lips, scalp and scrotum. There was, in addition, moderate conjunctivitis and some subjectively pronounced itching. This condition had existed for about two years, during which time the patient had been under treatment at different springs and sanitariums with light rays, etc. The case had already been diagnosed as dermatitis venenata, and it was believed that poison oak was the exciting cause. Mrs. J. S. consulted me the same day, stating that she had contracted poison oak from her husband some six months before. She had a moist erythematous rash on the shoulders, neck, forehead and behind the ears. She had taken the same treatment as her husband but had continued to grow worse as the weather became warmer, the itching becoming intense and the dermatitis extending down around the breasts. On examining her hair, I found it to be of a black color except near the scalp where it was very gray. She admitted having used Mrs. Potter's Walnut Juice Hair Stain for over two years, applying it at the roots every few days, thus keeping her hair black.

Mr. J. S.'s skin being more susceptible to the poison in the "Hair Stain" than that of Mrs. J. S., he had, by coming in contact with her hair, contracted a dermatitis almost as soon as she commenced its use, while her symptoms did not begin to manifest themselves until a year and a half afterwards. While he was away from his wife, on a trip to the southern part of the state, he had become much better, but on returning home all of his symptoms returned, especially on the lips, the latter ones undoubtedly caused by kissing.

Mrs. J. S. stopped the use of the "Hair Dye," and, with the use of a calamine lotion and a soothing ointment, both cases were soon cured.

Case 2. Mrs. L. called at my offce on June sixth of this year complaining of itching behind the ears, and on the forehead, scalp and neck; there was also burning and itching around the eyes. On examination I found a moist erythema behind the ears and on the neck; there were papules on the scalp and on the forehead, conjunctivitis, edema of the lids and erythema around the eyes. Her hair was brown, but gray next to the scalp. She confessed that she had used Mrs. Potter's Hair Stain for a few days before the skin symptoms began.

Case 3. On May second I was called to treat Mrs. W, aged 62. She complained of itching and burning back of the ears and on the face, neck, wrists and ankles. She had severe headache with a temperature of 101, and was very nervous from loss of sleep due to intense itching. The eruption first appeared on the forehead and behind the ears, and several days afterwards on the wrists and ankles. The eyes were very edematous and there was acute conjunctivitis. The hair was brown except next to the scalp, where it was gray. At first she denied using the "Hair Stain," but finally admitted that she had used it for two years.

Case 4. Mrs. K., aged 46, called at my office on February ninth complaining of intense itching behind the ears, and on the scalp, face, arms, neck and chest; these symptoms began about two months before.

Examination showed papules and a dry erythematous rash on the face, neck and shoulders; there was also a moist erythematous eruption over chest and around the breasts extending nearly to the waist. The itching was so intense and the patient so nervous that it was difficult to get a coherent statement from her. Her hair was gray, streaked with greenish brown and showed plainly the use of a hair dye. She admitted having used Mrs. Potter's Hair Stain for several months.

Case 5. On June 1st I was called to see Mrs. D., aged 48, who was suffering from a severe dermatitis behind both ears, and on the face, the neck, back and arms, accompanied by burning and itching. In addition to the erythema the ears were swollen and the eyelids edematous. She stated that the eruption had broken out on the day after she had used Mrs. Potter's Hair Stain, and, as she had suspected the cause, she had applied a little to her arm, with the result that she had an eruption there next morning.

From a study of these cases I would deduce the following interesting conclusions:

First. The apparent lasting immunity of some subjects.

Second. The apparent temporary immunity of some subjects, which under special influences is lost.

Third. The particular seats of predilection; namely, behind the ears, on the forehead and about the eyes.

Fourth. The variable lapse of time between contact with the irritant and the onset of the inflammatory reaction.

Treatment. Have the patient stop the use of the hair dye. Remove as much of the dye as is possible by washing the hair and scalp with alcohol and rinsing with water as hot as can be borne. Apply a calamine zinc lotion containing 2% of carbolic acid to the moist and inflamed lesions, and either Lassar's paste or zinc ointment with 2% each of salicylic and carbolic acids to the dry scaly lesions. Give a mild saline every morning.

All of the above cases were cured in from three days to three weeks.

Discussion.

Dr. H. D'Arcy Power, San Francisco: I would like to point out the close relation between these cases of hair dye poisoning and the same type of dermatitis venenata that is commonly met with among photographers, who, working with certain of the reducing agents, suffer in the same way. There is a chemical relation between the poison in these cases and the substances that the photographers use as reducers. I have repeatedly met with the photographic variety; its most common cause is working with the Metol, to the action of which many are very susceptible while others are unaffected. The general character of the dermatitis is the same as that described by Dr. Chipman, and while its first appearance is usually on the hands, the body may also suffer. Concerning this outwandering of dermatitis from the point of infection, I find it very difficult to believe that it is due to contact. I have seen a dermatitis start from the application of chrysarobin to the foot and extend over the greater part of the body. The drug was in form of an ointment and there was no physical evidence of its presence near the secondary lesions. As to the possibility of finding a chemical antidote for phenylene diamine or its product quinone, that ought to be possible; the latter substance is chemically transmutable into hydroquinone, which is not particularly irritating.

Dr. Francis Williams, San Francisco: I am very much interested in these cases, because they recall to my mind a case which I had two years ago, and I really did not appreciate its nature at the time. The patient readily acknowledged having used a hair dye, but I do not know what brand it was. It was interesting in that not only were the subjective symptoms extreme, but the edema and swelling so great as to close the eyes and render the features almost unrecognizable for a few days. It subsided under local treatment.

Dr. D. W. Montgomery, San Francisco: I have seen very few of these cases. Recently I had one, a woman with dermatitis of the forehead, ears and spreading down the neck simulating an erythematous eczema. The patient herself suspected it was from hair dye. After stopping the use of the dye for some time, the inflammation cleared up, to recur on resuming the dye. It was, therefore, plain that it was

the dye that was the noxious agent. A few days after this Dr. W. A. Hardaway of St. Louis called on me, and told me that he had quite a large number of these cases. Dr. Hardaway says that it will attack the lids of one eye, leaving the other untouched. In fact, it will sometimes attack the eyelids and spare the forehead. It is very probable that the patient's general condition plays a part in the outbreak of the eruption. It would be most desirable if something could be found that would prevent this particular dye from being irritant, because its use is not always a question of vanity, but is a question of economics, as there are many employments in which gray-haired women are decidedly discriminated against. Many of the department stores will not take women with gray hair, and they also have their troubles in the school department. The youngsters seem to have a particular antipathy to gray hair, just as in Biblical times they had to Elisha's bald head. I wish to thank Dr. Chipman and Dr. Pickett for bringing our attention to these very interesting cases.

Dr. Harry E. Alderson: These papers are very timely as we are all seeing these cases in increasing numbers. One reason for this is that Mrs. Potter, or whatever her name is, has been advertising this patent hair dye a great deal and physicians all over the country have been advertising it by reading papers and mentioning it by name.

Dr. E. D. Chipman, San Francisco: I am very much interested in Dr. Power's suggestions as to the finding of a chemical antidote for this substance. Many of our cases were in women who were employed, and who depended upon their work for their bread and butter, and who could not gain employment as long as their gray hair was in evidence. I will say for Mrs. Potter that with the dye you can get the most beautiful Titian shade or the deepest black according to the quantity used. It is largely a question of susceptibility to it, as in poison oak; some of us can wade right into the poison oak and come out unharmed while others get severe reactions from going near it. Dermatitis venenata may appear in single patches or it may coalesce. We have seen instances where it would affect the upper lid and spare the lower lid. Concerning the spread of the disease, I have never been able to convince myself that either the spread of this disease or of poison oak were due to anything else but actual transference from part to part. It is very difficult for me to be convinced that these things travel in the blood or by means of nervous impulse or anything of that sort; they are too mysterious or vague for me to comprehend.

Dr. J. Cameron Pickett. San Francisco: I believe that this dye is the same that is used in the dyeing of black stockings; the journals have reported several cases of dermatitis from this cause, but I have never seen one.

Smoker.

On Friday evening, August 25, the society entertained Professor Ernest Fuchs at a smoker at the Tait-Zinkand Cafe. All visiting doctors who had come to the city to attend the professor's lectures were likewise invited. Everybody present had a grand time, and, while the reunion was a strictly informal one, short addresses were made by the President, by the Chairman of the Eye, Ear, Nose and Throat Section, as well as by Professor Fuchs, Dr. Lamotte of Seattle, Dr. Roberts of Pasadena, Dr. Briggs of Sacramento and Dr. George Powers of San Francisco. At the close of the evening, Dr. Barkan wished the professor Godspeed.

Case of Acute Localized Encephalitis After Whooping Cough—Decompression Followed by Relief from Symptoms.

By R. L. ASH, M. D., San Francisco.

Harry O., aged 2 years 8 months, entered Children's Hospital, May 18, 1911. He had been in good health up to January, 1911, when he contracted a severe whooping cough. On March 13 he was suddenly seized with a general convulsion, which was followed by another three days later. This second attack was succeeded by unconsciousness lasting four hours. The next day, according to the mother, the convulsions changed to their present character. They gradually became more frequent.

The attacks, on admission to the hospital, usually came every few minutes, and lasted five to ten seconds; occasionally, especially in the afternoon, one or two hours might elapse without one. His head and trunk fell to the right (especially noticeable when he sat up); there were slight twitchings of both corners of mouth, sometimes of right fingers. The pupils were dilated, the eyes remained open and staring. He could usually be roused by offerings of chocolate, etc., for which he reached with his right arm.

He stopped walking, probably in fear of falling. That he had fallen frequently was shown by scars on right forehead.

There was no vomiting, no headache, no incontinence.

Physical examination was practically negative, except for a slight spasticity of right arm and leg.

As the attacks were increasing in number and duration, I transferred patient to the surgical service, Dr. Larson, with the diagnosis of focal encephalitis, probably on left side.

On June 16, 1911, Drs. Terry and Larson performed an osteoplastic resection of the skull, widely exposing left motor area. On opening the dura, the brain was found to be oedematus. Further exploration revealed a small reddish patch of firm adhesions, about the size of a half dollar, uniting dura, pia and underlying cortex at about the inferior junction of the anterior central and superior frontal convolutions (trunk area?). The adhesions were broken down, the flap replaced with the exception of a circular piece of bone about two inches in diameter in the neighborhood of the affected area.

After the operation the same frequent attacks continued for about twelve days. Then they became less and less, and finally disappeared about July 6. He soon began walking. Though there had been no aphasia of any kind before operation, for some reason the child stopped speaking till shortly before his discharge, July 27.

At present there is apparently no cerebral trouble of any kind.

The prognosis is exceedingly doubtful. Only a few recoveries, spontaneous or post-operative, are recorded in the literature.

Report of the Committee for the Study of Anterior Polyomyelitis in San Francisco During 1910.

Compiled by E. C. FLEISCHNER, M. D., San Francisco.

In July, 1910, a committee, composed of Drs. M. B. Lennon, R. L. Ash, W. F. McNutt, Jr., E. Smith, G. J. McChesney and E. C. Fleischner, was appointed by Dr. Langley Porter, the President of the society, to study and gather data on the epidemic of poliomyelitis which at that time seemed to be prevailing in San Francisco.

At the first meeting of the committee it was decided to address return postal cards to all licentiates practicing medicine in San Francisco, containing the the following questions:

1. Have you had any cases of the classical type of poliomyelitis in your practice since January, 1909?

2. Have you had any cases of encephalitis resembling meningitis?

3. Have you had any cases of acute tremor or ataxia in children:

4. Have you had any cases of acute paralysis of the facial or eye muscles?

5. Have you had any cases of acute ascending paralysis?

6. Have any cases other than those in your practice come to your notice since January 1, 1910?

Positive replies were received reporting 67 cases occurring between October 1, 1909, and October 1, 1910.

At the second meeting of the committee, held in August, 1910, it was voted to send a further list of questions to those physicians who had reported cases of the disease, in order to obtain data on the location, etiology if possible, and symptomatology of this obscure condition. Without taking up the time to detail here the questions that were asked, the committee begs leave to now submit the results of the observations that were made upon the cases studied collectively:

I. Sex—42 cases or 63% were males; 25 cases or 37% were females.

II. Age—3 cases or 4.5% occurred under one year of age; 6 cases or 9% occurred at 1 year of age; 18 cases or 27% at 2 years; 13 cases or 19.5% at 3 years; 7 cases or 10.5% at 4 years; 6 cases or 9% at 5 years; 2 cases or 3% at 6 years; 1 case or 1.5% at 8 and 9 years; 3 cases or 4.5% at 10 years; and 1 case or 1.5% each at 11 years, 12 years and 13 years. Three cases or 4.5% occurred in adults; one at 20 years, 28 years and 30 years. In one case, 1.5%, the age was not given. The most striking deduction from these figures is the large number of cases seen between the ages of one and six years. Seventy-five per cent. of all the cases have occurred during this period.

III. Month of year. January, 1 case, 1.5%; February, 4 cases, 6%; March, 1 case, 1.5%; April, 3 cases, 4.5%; May, 11 cases, 16.5%; June, 14 cases, 21%; July, 11 cases, 16.5%; August, 12 cases, 18%; September, 3 cases, 4.5%; October, 2 cases, 3%; November, 1 case, 1.5%; December, 4 cases, 6%. Seventy-two per cent. of all the cases occurred during four summer months, May, June, July and August.

IV. History of exposure. In 65 cases, 97%, no history of exposure was obtainable. In two cases, 3%, there was a history of exposure. One was a boy whose brother had been affected four months previous; the second was a child whose mother, three days before the onset, had nursed a sick child who showed typical symptoms of the disease.

V. Onset. In 64 cases, 95.5%, the onset was sudden. In 3 cases, 4.5%, it was gradual, being preceded by malaise for several days.

VI. Injury. There was a history of preceding injury in 3 cases, 4.5%, the exact bearing of which is doubtful.

VII. Chill. In only 4 cases, 6%, was the disease ushered in by a chill. In 63 cases, 94%, there was no chill.

VIII. Condition of the patient at the time of onset. This is reported as good in 56 cases, 83½%. In one case, 1.5%, there was a history of measles three weeks before onset. Four cases, 6%, were recovering from pertussis. One case, 1.5%, was recovering from tonsilitis when attacked. One case, 1.5%, was reported as being anemic. In 4 cases, 6%, the condition of the patient at time of onset was not noted.

IX. Vomiting was present in 15 cases, 22.5%. Absent in 45 cases, 66%, and not noted in 7 cases, 10.5%.

X. Temperature was high in 55 cases, 82%; normal in 5 cases, 7.5%, and not noted in 7 cases, 10.5%.

XI. Pain was present in 40 cases, 59.5%; absent in 20 cases, 30%; not noted in 7 cases, 10.5%.

XII. Convulsions were present in 7 cases, 10.5%; absent in 49 cases, 73.5%, and not noted in 11 cases, 16.5%.

XIII. Diarrhea was present in 10 cases, 15%; absent in 47 cases, 68.5%, and not noted in 11 cases, 16.5%.

XIV. Constipation was noted in 14 cases, 21%; absent in 37 cases, 55%; not noted in 16 cases, 24%.

XV. Sore throat was present in 11 cases, 16.5%; absent in 39 cases, 58%, and not noted in 17 cases, 25.5%.

XVI. Duration of acute febrile symptoms. The fever lasted 1 day in 5 cases, 7.5%; 2 days in 7 cases, 10.5%; 3 days in 13 cases, 19.5%; 4 days in 10 cases, 15%; 5 days in 5 cases, 7.5%; 6 days in 1 case, 1.5%; 7 days in 3 cases, 4.5%; 8 days in 1 case, 1.5%; 9 days in 1 case, 1.5%; 10 days in 1 case, 1.5%; 14 days in 1 case, 1.5%; 21 days in 2 cases, 3%. In 7 cases, 10.5%, there was no fever. In 10 cases, 15%, no note was made on the point. In 60% of the cases the fever lasted between one and five days.

XVII. Time of onset of paralysis. Paralysis occurred on first day of disease in 23 cases, 34.5%; on second day in 10 cases, 15%; on the third day in 9 cases, 13.5%; on fourth day in 8 cases, 12%; on the fifth day in 7 cases, 10.5%; on sixth day in 1 case, 1.5%; on seventh day in 4 cases, 6%; on fourteenth day in 2 cases, 3%. Time of onset of paralysis was not noted in 3 cases, 4.5%. In 85.5% of the cases the paralysis occurred within the first five days of the disease.

XVIII. Opisthotonos was present in 9 cases, 13.5%; absent in 42 cases, 63%, and not noted in 16 cases, 24%.

XIX. Length of time from appearance of paralysis to maximum intensity of paralysis. In 22 cases, 33%, the paralysis reached its point of greatest intensity in 1 day; in 6 cases, 9%, in 2 days; in 4 cases, 6%, in 3 days; in 4 cases, 6%, in 4 days; in 1 case, 1.5%, in 5 days; in 1 case, 1.5%, in 14 days, and in 1 case, 1.5%, in 21 days. The time was not noted in 28 cases, 42.7%.

XX. Time of beginning improvement. Improve-in the paralysis was noted on the first day in 7 cases, 10.5%; on the second day in 1 case, 1.5%; on the fourth day in 1 case, 1.5%; on the fifth day in 3 cases, 4.5%; on the seventh day 3 cases, 4.5% on the tenth day in one case, 1.5%; on the fourteenth day in 7 cases, 10.5%; on the twenty-first day in 5 cases, 7.5%; on the thirtieth day in 3 cases 4.5%; on the forty-fifth day in one case, 1.5%; on the sixtieth day in 2 cases, 3% There was no improvement in 3 cases, 4.5%, and no note was made upon this point in 29 cases, 43.5%.

XXI. Muscles involved in acute attack. Both lower extremities were involved in 20 cases, 30%. The left lower extremity was involved in 17 cases, 25.5%; the right lower extremity was involved in 10 cases, 15%. Both upper and lower extremities were involved in 4 cases, 6%. Right upper and lower extremities were involved in 3 cases, 4.5%. Right and left lower and right upper extremities were involved in 2 cases, 3%; right and left lower and left upper were involved in 2 cases, 3%. Both lower and both upper extremities were involved in 2 cases, 3%. Right upper extremity was involved in 1 case, 1.5%. Right shoulder 1 case, 1.5%. Left upper 1 case, 1.5%. Right tibialis anticus 1 case, 1.5%. Left tibialis anticus 1 case, 1.5%. Left lower and palpebral muscles 1 case, 1.5%. Both lower extremities and abdominal muscles 1 case, 1.5%.

XXII. Muscles permanently involved. (1) No note was made upon this point in 18 cases, 27%. (2) There was a complete recovery in 14 cases, 21%. (3) Right leg was involved in 9 cases, 13.5%. (4) Left leg was involved in 5 cases, 7.5%. (5) Left lower extremity was involved in 4 cases, 6%. (6) Right and left lower extremities were involved in 3 cases, 4.5%. (7) Right upper and lower were involved in 2 cases, 3%. (8) Right lower extremity was involved in 2 cases, 3%. (9) Right tibialis anticus was involved in 2 cases, 3%. (10) Left arm was involved in one case, 1.5%. (11) Left tibialis anticus in 1 case, 1.5%. (12) Right quadriceps femoris and tibialis anticus in 1 case, 1.5%. (13) Right quadriceps femoris, tibialis anticus and peronei muscles in 1 case, 1.5%. (14) Left quadriceps femoris, tibialis anticus and peronei muscles in 1 case, 1.5%. (15) Left upper and lower extremities in 1 case, 1.5%. (16) Right and left lower extremities and right upper extremity 1 case, 1.5%. (17)

Right and left lower and left upper extremity, 1 case, 1.5%.

XXIII. Electrical reactions were noted in too few cases to be of statistical value.

XXIV. Lumbar puncture and blood counts were also done in too few cases to be of statistical value.

XXV. Death occurred in two cases after the onset of the paralytic stage.

The committee submitted to the society in December, 1910, a preliminary report showing the geographical distribution of the disease as demonstrated by indicating each case reported on a map of the city. This map is again submitted to the society as a part of the final report of your committee.

A careful study of this map reveals some very interesting facts, one of the most striking of which is the occurrence of the disease in small groups in different sections of the city and the bearing which this may have upon the infectious nature of the disease is worthy of consideration.

Dividing the city into sections: 1. In the so-called Richmond District, bounded on the east by First avenue, on the west by the Pacific Ocean, south by Golden Gate Park, north by San Francisco Bay and Presidio, an approximate area of four square miles, there were three cases.

2. In the Sunset District, south of the Park, bounded on the north by Golden Gate Park, on the south by the Rancho Laguna de la Merced, west by Pacific Ocean, east by Stanyan street and San Miguel Rancho, an approximate area of five square miles, were five cases. Two of these were on Parnassus Heights.

3. In the district bounded by First avenue on the west, Divisadero street on the east, Fulton street on the south, the Presidio and the bay on the north, the approximate area of which is two square miles, there were no cases.

4. In the district bounded by Stanyan street on west, Divisadero and Castro on the east, Fulton on the north and Seventeenth street on the south, an approximate area of .8% of a square mile, there was one case.

5. In the district bounded on the west by Stanyan street and San Miguel Rancho, on the north by Seventeenth street, on the east by Castro street and Islais Creek, on the south by Ocean avenue, there were four cases in an approximate area of 2.5 square miles.

6. In the district bounded on the north by Ocean avenue, on the south by the county line, on the east by Islais Creek and on the west by Automobile Boulevard, an approximate area of two square miles, one case.

7. In the district bounded on the west by Divisadero street, north by the bay, south by Union street and east by Van Ness avenue, an approximate area of .8 square mile, three cases.

8. In the district bounded on the west by Divisadero street, east by Van Ness avenue, south by Sutter and north by Union street, one case in an approximate area of .8 square mile.

9. In district bounded on west by Divisadero street and Castro, north by Sutter, south by Market and east by Van Ness avenue, an approximate area of 1.1 square miles, twelve cases.

10. In district bounded on west by Van Ness avenue, east and north by bay and south by Market street, an approximate area of 2.2 square miles, five cases. Four of these were on North Beach.

11. In the district bounded on northwest by Market street, northeast by Bay, southwest by Twelfth street and southeast by the Southern Pacific Railroad tracks, an approximate area of 1.7 miles, six cases.

12. In district bounded on the west by Castro street, northwest by Market street, northeast by Twelfth street, east and south by the Southern Pacific Railroad tracks, an approximate area of 3.5 square miles, five cases.

13. In the Potrero District, including Bernal Heights, bounded on east by Bay, south by Islais Creek and Islais Creek channel, west and northwest by the Southern Pacific Railroad tracks, an approximate area of 3.2 miles, eight cases.

14. In the district bounded on the west by Islais Creek, north by Islais Creek and Islais Creek channel, east by the bay and south by county line, three cases in an approximate area of six square miles, none of which was reported in South San Francisco.

In eleven cases the residence was not given. In two instances two cases occurred in the same house. Two of the children were affected the same month, July, 1910. The other two were afflicted at four months' interval, one in February, the next one in June, 1910.

In sixteen instances, 24%, the cases occurred in a locality in an adjacent block to which there was another case. In twenty instances, 30%, the cases occurred with one square block intervening. Thirty-five cases occurred in hilly sections of the city, twenty-one in level sections.

The most striking occurrence of the disease was in two sections: (1) Alamo Square and the neighborhood surrounding, (2) Howard and Seventh streets and the neighborhood surrounding.

Alamo Square is bounded by Hayes and Fulton, Steiner and Scott streets, within three blocks of which seven cases occurred, within two blocks of which five cases occurred, and within one block of which three cases occurred. Within three blocks of the corner of Howard and Seventh streets, five cases occurred, within two blocks of the corner three cases occurred. Four cases occurred within three blocks of the corner of Mason and Union streets.

Conclusions.

1. San Francisco has unquestionably been the seat of an epidemic of anterior poliomyelitis from October, 1909, to October, 1910.

2. That the cases ran typical clinical courses as they are ordinarily described for this disease.

3. The period of life most susceptible to this condition is between the ages of 1 and 6 years.

4. The summer months, May, June, July and August, represent the time of year that the disease is most potent.

5. Pain is a much more common symptom than was formerly described in the older text-books.

6. It is regrettable that lumbar puncture and blood counts were done in so few cases. Realizing the difficulty that permission to perform lumbar puncture entails, still there can be no doubt that this procedure offers the only accurate method of differentiating the fatal cases of poliomyelitis from unusual cases of meningitis. There are unquestionably many deaths from poliomyelitis and yet our bureaus of vital statistics rarely show this disease as a given cause of death. The importance of lumbar puncture is made evident when we realize that only by spinal cord and brain investigation have we thus far made any progress in the elucidation of the etiological factor in this obscure disease.

7. The occurrence of the disease in certain localities of the city while not sufficiently striking to warrant definite deductions is at least in three instances marked enough to merit comment and further investigation as to the bearing which sanitary and geographical conditions in these particular sections may have on the occurrence of the disease.

Discussion.

Dr. S. J. Hunkin, San Francisco: I am very much interested in this report of Dr. Fleischner but I am very much surprised at the small number of cases which he presents as having occurred during the year. I am under the impression that we must have had hundreds of cases in San Francisco during that period. My records alone show 76 cases during the

year. This, of course, was from the whole state. I am also surprised at the proportion at the ages which Dr. Fleischner gives; I would have said that there were many more cases in adults than this report would lead one to suppose. I am quite sure that we have had over a dozen cases in children between 12 and 16; we had one acute case in a man of 38; one in a boy of 22 and several cases in adults over 23 and 24. I feel quite sure that the age limit can be greatly increased from what we have supposed it to be. I have been impressed with the amount of pain present in poliomyelitis as compared to what we used to suppose existed in this disease, and this Dr. Fleischner has called attention to. I also believe that many cases pass unnoticed; as a matter of fact, such cases have appeared in my office. One was a girl of 14 or 15 who had gone the rounds for 2 to 3 years with the diagnosis of congenital dislocation of the hip. I have had cases that were diagnosticated rheumatism, which were in reality poliomyelitis. Often so-called cerebral meningitis is poliomyelitis. There are quite a number of comparatively sudden deaths due to poliomyelitis in my opinion not alone in children but in adults. Last fall I saw a case in San Rafael of a young boy of 22 years of age. The boy had been down town and had done quite a good deal of walking; the day was warm and he had eaten rather heartily of watermelon. He returned home feeling rather tired and his mother gave him a footbath to relieve his tiredness. The boy went to bed and slept all night. When he was called in the morning to go to work he could not move his legs and in 48 hours he could move neither his arms nor his legs. At the end of 3 or 4 days I saw him and there was not the least bit of movement below his neck. I was told that in San Rafael that week there had been 2 sudden deaths. One was a man who had fallen on the street and had become very limp. The coroner did not know whether this death was caused by heart disease or apoplexy; the autopsy revealed nothing and it was generally understood that the man had died of heart disease. In my mind there was very little doubt that the cause was acute poliomyelitis. I think the diagnosis should be called in question in every case of meningitis, in every case of rheumatism in children, in every case of severe headache in children and also each instance of rather rapid or sudden death, especially in children or young adults.

Dr. Langley Porter, San Francisco: The object of this statistical investigation is largely to gather data that will enable us to help in the control of this disease. One point that the committee has brought out which is very striking is the incidence of the disease in the summer months. This fact has been observed in every epidemic of poliomyelitis that has ever taken place, with one exception. Flexner in addressing societies in the east stated that while he was not prepared to say that flies were the agents of transmission that there was a great deal of evidence that added to that end. In San Francisco the summer months are very largely fly months and that perhaps is one small item to be added to the evidence against the fly as transmitter of the disease. Another point to be considered is that we do no get enough lumbar punctures and the reason for this is that we are afraid to ask for them, and I do not believe that any physician who has the confidence of the family would be refused lumbar puncture if when he asks for it he insists that it is a necessary and proper thing to do; we are very apt to lay on the patients sins that belong to ourselves. I move that the Society in asking the chairman to discharge the committee, extend a vote of thanks and commendation for the excellent work that has been done and for the very exhaustive report that has been presented.

Dr. Milton B. Lennon: Dr. Fleischner has proven the incidence of an epidemic of poliomyelitis in San Francisco last year. I agree with Dr. Hunkin that the number of cases included in the report in no way represents all that have occurred. In the beginning many men did not recognize poliomyelitis, for they were influenced by the old name of infantile spinal paralysis. We know that it affects adults, that it may be cerebral rather than spinal, and that it may have no residual paralysis. Many recognized cases were not reported. Finally there are the abortive cases which defy accurate recognition, unless one has a costly laboratory, monkeys, and active virus at hand, and these are denied to most of us. I think that the sixty-nine cases in the report represent no more than one-third of the cases which occurred in the past year.

Section on Urology—Aug. 29th, 1911.

1. Phenolsulphonaphthalein for Determination of Renal Function. R. L. Rigdon. Discussed by Drs. Mize, Krotoszyner and Rigdon.

2. Case of Rupture of Kidney. Melville Silverberg. Discussed by Drs. Fehleisen, Rosenstirn, Rigdon, Beasley and Krotoszyner.

3. Athletics and Sexual Neurasthenia. V. G. Vecki. Discussed by Drs. Fehleisen, Rosenstirn and Vecki.

4. Demonstration of Instruments. Henry Meyer.

Athletics and Sexual Neurasthenia.*

By VICTOR G. VECKI, M. D., San Francisco.

Man was neither born nor created to do hard work. In the Bible we are told that Adam did not feel like working until Eve felt that it was time to dress herself.

People in general should like to return to yonder paradise where work is only play; and frequently we hear the cry 'back to nature,' but our tastes and endless wants will keep us out of paradise forever, and humanity is sure to remain housed, compelled to work overtime, and by degrees to be more and more neurasthenized.

The white man took upon himself the burden of civilizing or exterminating the few remaining close to nature races and making them acquainted with our neurasthenia producing virtues, wants, and vices.

While it may meet with contradiction were one to claim that every civilized person is neurasthenic to a certain degree, we all know that there are only a few neurasthenics who know themselves to be so, and the number of those who feel compelled to consult a physician is in proportion almost disappearingly small.

At close examination we find the world, and mainly modern society, full of sexual neurasthenics. There is, however, only one symptom all these neurasthenics care about, which they do not like, and the only one capable of compelling them to seek help for, and that is sexual impotence. So long as the neurasthenic is more or less over-strung and over-stimulated he is inclined to admire himself and he does not notice that anything is wrong with him until the excesses which are primarily caused by neurasthenia have in their turn become factors in the aggravating of the evil, and when in consequence the sexual organs refuse altogether to functionate. This is the reason why most physicians when speaking of sexual neurasthenia have only sexual impotence in mind, and why all the other symptoms of sexual neurasthenia are studied very little or not at all.

The man who does not hunt and fish his own food, and does not climb trees to gather his dessert, the man who does not live close to nature looks instinctively for some substitute for the exercise in the open air commanded by nature. Thus came the various games, athletics and sports in order to keep the muscles from becoming flabby and the abdomen from growing pinguid.

We know that all bodily exercise is conducive to health in general only in proportion to the case with

which it was performed, and that injudicious efforts in any kind of athletics are always injurious. This is the reason why the ancient Greeks already claimed that professional athletes were sexually weak. This sweeping assertion was and is adopted by authors, and being copied from one book into the other has survived these many centuries, but is certainly not correct.

The old Grecian trainers and managers of athletes thought that absolute abstinence from any sexual intercourse was conducive to the development of extraordinary strength, athletes therefore were compelled to abstain, and the general public gained the impression that they did not care. The experience of modern trainers and the athletes themselves, however, is different. They all agree on the following opinion: while the mind is preoccupied with any great coming event, which may be of very small importance to others, but is the one great event for the contestant himself, athletes are in the same position as great scientists and bookworms: sexual desires are dormant. Add to this preoccupation of the mind the actual bodily work, which, in many cases is pushed to the limit of endurance, and we can easily understand that when the days are spent in hard work the nights must be passed in peaceful slumber. As soon as the contest is over the dormant desires reappear with vehemence and excesses are the usual result.

These periods of change from abstinence to excess and vice versa, the injudicious training and overtraining until most of them are "gone stale," and not infrequently periodical overindulgence in alcohol, alternating with frantic efforts at reform are the main reasons why we find so many neurasthenics amongst our professional athletes, and why they last such a short time only.

Conditions are quite different with persons training and exercising with the only purpose in view of keeping the elasticity of their bodies. No kind of gymnastics or systematic exercising, even if carried to athleticism can ever cause sexual nor any other neurasthenia. Of course, when exercise or sport cease to be play and become hard work or even degenerate into a mania then neurasthenia is near at hand. We must not forget, however, that in many cases the neurasthenia is the origin of such absurdities and drives the victim to irrational acting.

Take, for instance, one of our newest sports. the automobiling. It certainly has become an actual menace. Talk about Abe Ruef like other prisoners in San Quentin losing their personality because of the ever present guns of the guards being trained on them! How can the San Francisco pedestrians keep their personality dodging the autocars speeding on crossings and dashing around corners? The long-suffering public could hardly be blamed should they feel some kind of a satisfaction when learning that motorcar speeding causes sexual impotence. Several cases I observed made me suspect this fact years ago, but I did not dare to trust my own observations, fearing that my wish may have been the father of my inferences and deductions. But now comes such a careful and absolutely reliable observer as Notthaft (Zeitschrift fuer Urologgie, April, 1911), and reports four cases of sexual impotency in wealthy married men fond of automobile speeding, and one in a chauffeur. Notthaft knows of similar cases in the experience of others. The sexual depression developed in from three months to three years after special devotion to the sport. Notthaft ascribes the impotency to a cerebral neurasthenia from the nervous strain of the speeding. The intense concentration of mind required in speeding, the anxiety and the jar of the car—all tend to induce neurasthenia.

I am convinced that the jar of the car, and the bouncing upon the soft and warm upholstery are the chief harmful influences, because the speed-drunk motormaniacs have hardly any mind to concentrate upon anything.

At the end of the seventeenth century Lallemand wrote his great book on spermatorrhoea and other ailments which today we would call sexual neurasthenia. Lallemand's writings were a regular mine to many European authors on genito-urinary diseases for almost a century. At present Lallemand is somewhat neglected, it hardly being necessary to study him, because almost everything he wrote is preserved in most of our modern books on the same and kindred subjects.

It is not to be wondered that a genito-urinary surgeon of the seventeenth century, no matter how clever he may have been, was possessed by some prejudices. One of Lallemand's prejudices, inherited from Hippocrates was the idea that horseback riding is very injurious for any one afflicted with any kind of a genito-urinary disease. Religiously goes this preaching against horseback riding from book to book, and our authors only demonstrate their love for the perpetuating of old prejudices, and simply give conclusive proof that they know very little or nothing about the question.

The plain truth, of which everyone can convince himself easily, however, is that horseback riding properly done can never be injurious to the sexual organs nor to their functions. It is quite true that the rider must sit in his saddle upon that part of the body which is by nature upholstered and constructed for that purpose. Of course, like any other bodily exercise horseback riding is also injurious to various organs if done improperly. The rider who depends upon his balance instead of relying upon a firm clutch of his legs, the rider who rides with the stirrups low, cultivating an exclusive sitting trot, shaking in the saddle like a jelly-fish, hitting the saddle with his perineum, rubbing and knocking his sexual organs against a high and hard frontal knob, or the other kind of a rider who, thinking he rides the rising trot, bouncingly lands on his perineum or testicles, must blame themselves and not the riding.

A single glance at the various cavalries of the world, the experience that everywhere the horseman was and is woman's favored, that wherever horse-rearing is carried on and horseback riding is common the number of births, legitimate and others, is above the average, while the morality of such places is not exemplary, are ample proof that riding done properly is not contraindicated in any genito-urinary disease in which absolute rest is not required.

Altogether we must come to the conclusion that no athletics provoke neurasthenia, that systematic exercise, horseback riding included, is indicated and helpful in many cases of neurasthenia, and that the abuses only can be harmful.

SOCIETY REPORTS

COOPER COLLEGE SCIENCE CLUB.

A regular meeting of the Cooper College Science Club was held on September 4th, 1911, at 8:30 p. m.

The election of officers for the coming year resulted as follows: President, P. H. Luttrell; secretary, E. D. Downing; treasurer, J. J. Walsh; board of directors, Wm. Ophuls, H. R. Oliver, R. L. Wilbur, F. W. Birtch, E. C. Dickson.

Scientific Program—1. (a) Case of Luetic Pleurisy; (b) Specimen of Gastric Ulcer; (c) Specimen of Gallstones. Wm. Fitch Cheney. Discussed by Drs. Oliver and Cheney.

2. Presentation of Cases. E. C. Sewall. Discussed by Drs. Graham and Sewall.

3. Presentation of Surgical Cases. I. W. Thorne. Discussed by Drs. Cheney, Thornberg, Dickson and Thorne.

Refreshments were served at the close of the program.

CALIFORNIA ACADEMY OF MEDICINE.

The California Academy of Medicine held a regular meeting on Monday evening, Aug. 28th, 1911, at which the following program was given:

1—Cases and Comments on Typhoid Lesions of Bone. Harry M. Sherman.

2—Report of a Case of Typhoid Pelvic Abscess. A. J. Lartigau.

3—Case Report. Harold Brunn.

The general discussion was opened by Dr. Ophuls, who was followed by Drs. Kugeler, Rixford, Montgomery, Lieut.-Col. Freck, Hunkin, Sherman and Lartigau.

At the close of the program refreshments were served.

PACIFIC COAST OTO-OPTHOLOGICAL SOCIETY.

During the week of Professor Fouchs' course of lectures given at the Medical Department of Stanford University, the Pacific Coast Oto-Opthological Society effected a permanent association for the advancement of their specialty. At the time a permanent organization was effected, forty members were enrolled. Primarily this Society will be made up of practicing specialists of Washington, Oregon and California. They will meet every year in one of the three States and at the same time as the State Medical Society. The first meeting will be held in the State of Washington (date and place to be arranged later).

To become a member of the Pacific Coast Oto-Opthological Society, it will be necessary for the applicant to have the signature and seal of the Secretary of the County Medical Society in which such applicant resides. The dues, $2.50 a year, payable January 1, 1912. By sending in your application before January 1st, 1912, you become a charter member. Officers for the ensuing year:

President—Dr. John F. Dickson, Oregonian Bldg., Portland, Oregon.

Vice-President—Dr. Wm. H. Roberts, Pasadena, California.

Executive Committee—Drs. Wm. A. Martin, San Francisco, Cal., one year; Henry La Motte, Seattle, Wash., two years; John F. Dickson, Portland, Ore., three years.

Secretary and Treasurer, Dr. Cullen F. Welty, 210 Post street, San Francisco, Cal.

Address all communications to the Secretary.

PROCEEDINGS OF THE AMERICAN PROCTOLOGIC SOCIETY.

Thirteenth Annual Meeting, held at Los Angeles, Cal., June 26 and 27, 1911.

The President, Dr. George J. Cook, of Indianapolis, Ind., in the chair.

Officers elected for the ensuing year: President, John L. Jelks, M. D., Memphis, Tenn., Vice-President, Alfred J. Zobel, M. D., San Francisco, Cal.; Secretary-Treasurer, Lewis H. Adler, Jr., M. D., Philadelphia, Pa.

Executive Council—George J. Cook, M. D., Indianapolis, Ind., Chairman; John L. Jelks, M. D., Memphis, Tenn.; Dwight H. Murray, M. D., Syracuse, N. Y.; Lewis H. Adler, Jr., M. D., Philadelphia, Pa.

The place of meeting for 1912 will be at Atlantic City, N. J. Exact date and headquarters to be announced later.

The following were elected Associate Fellows of the Society: Dr. Arthur F. Holding, 98 Chestnut St., Albany, N. Y.; Dr. Ralph W. Jackson, Fall River, Mass.; Dr. E. H. Terrell, 304 East Grace St., Richmond, Va.

The following is an abstract of the principal papers read:

Extracts from the Report on Proctologic Literature from March, 1910, to March, 1911.

By SAMUEL T. EARLE, M. D., Baltimore, Md.

In Samuel T. Eearle's review of Proctologic Literature from March, 1910, to March, 1911, he quotes from the following authors giving the salient points from each of their papers:

Harrison Cripps, British Medical Journal, Vol. I, 1910, p. 292, endorsing Mummery's criticism of Whitehead's operation for hemorrhoids.

Dr. F. C. Wallis, British Medical Journal, Vol. I, 1910, p. 415, in defense of Whitehead's operation.

Dr. Donald C. Balfour, Rochester, Minn., Annals of Surgery, Vol. II, 1910, p. 239, gives Dr. W. J. Mayo's method of Anastomosis between the sigmoid and rectum.

Dr. Charles H. Peck, New York City, Annals of Surgery, 1910, Vol. LI, p. 242, describes a method of excising the rectum for cancer by the perineal route.

Dr. Norman Porritt, London Lancet, 1910, Vol. I, p. 360, describes a simple and efficient operation for hemorrhoids.

Dr. J. P. Lockhart Mummery, London Lancet, 1910, Vol. I, p. 641, describes a new operation for prolapse of the rectum.

Mr. Heaton C. Howard, London Lancet, 1910, Vol. I, p. 240, showed a case of stricture of the rectum treated by injections of fibrolysin, which were given three times a week.

Dr. Walton Martin, Annals of Surgery, 1910, Vol. LI, p. 125, reported a case of anastomosis between the sigmoid and rectum by invagination.

Dr. Joseph A. Blake, Annals of Surgery, 1910, Vol. LI, p. 261, gives an unusual method of anastomosis in cases of carcinoma of the rectum.

Extracts from a statistical report of 120 cases of removal of the rectum for cancer by Dr. William J. Mayo, Annals of Surgery, 1910, Vol. LI, p. 895.

Dr. W. Sampson Handley in his second Hunterian Lecture gives some very interesting and instructive suggestions about the extension of cancer of the rectum by the lymphatic system, British Medical Journal, 1910, Vol. I, p. 927.

A series of instructive papers on excision of the rectum for carcinoma can be found in the British Medical Journal, 1910, Vol. I, by the following writers:

Charles A. Morton, page 1378; Harrison Cripps, page 1323; F. Swinford Edwards, page 967; W. Bruce Clarke, page 1023; P. Lockhart Mummery, page 1144; W. Ernest Miles, page 1203.

James Swain, British Medical Journal, 1910, Vol. I, p. 361, advocates very strongly the removal of all lymph glands in cancer of the rectum.

Dr. E. K. Scott, Boise, Idaho, Northwest Medi-

cine, Vol. II, No. 3, p. 85, a plea for more thorough examinations of the rectum for carcinoma by the general practitioner.

Dr. C. L. Gibson, Annals of Surgery, 1910, Vol. LI, p. 116, gives a special method for end-to-end Intestinal Anastomosis by the Invagination Method, in cases where other methods would be impracticable. Sigmoid Replaced by Small Intestine. Riechel, Verhand. d. Deutsch. Gesell. f. Chir., April, 1910.

Dr. Wilson, Annals of Surgery, February, 1911, p. 223, speaks of the association of diverticuli and carcinoma in the lower bowel.

DeWitt Stetten, Zeitschrift of the German Hospital, New York, 1909, published two most interesting observations on the co-existence of tuberculous ulcers and carcinoma of the large intestine.

Dr. Wyllys Andrews, Surgery, Gynecology and Obstretrics, January, 1911, p. 63, gives an interesting account of a new form of industrial accident—Pneumatic Rupture of the Intestine.

Bard, Semaine Medicale, November 30, 1910, Vol. XXX, No. 48, p. 565, recounts a case showing this rather unusual type of Hirschsprung's disease,—Idiopathic Dilatation of the Rectum.

Treatment of Painful Fissures and Piles by High Frequency Currents. A. Teirlinck, Gand, Belgium. The Proctologist, December, 1910.

PROCTOLOGY.

Symposium of papers read at the American Protologic Society, held June 26-27, 1911, in Los Angeles.

How Can an Infected Sigmoid Diverticulum Be the Cause of a Retro-Peritoneal abscess?

By DR. A. TIERLINCK, of Gand, Belgium.

In the present state of abdominal surgery the appendix is frequently regarded as the chief cause of all abdominal troubles.

Recently numerous works have been published concerning sigmoiditis and persigmoiditis. Diverticular abscesses are not as frequent as appendicular abscesses. It should be borne in mind that the sigmoid is often located in the right iliac fossa and diverticular abscesses may be mistaken for appendicular trouble.

In the young the sigmoid flexure is free and communicates with the retro-mesenteric and pre-aortic cellular tissues by the tissue of the meso-colon. Infection can be transmitted from the diverticula into the retro-peritoneal cellular tissue by three means,—the connective tissue, the lymphatic system, and the venous blood-vessels.

In adults the sigmoid is adherent to the posterior abdominal wall and in such cases there is another source of infection,—an external one; due to the numerous anastomoses between the meso-colic glands and the parietal lymphatic system and between the sigmoid blood-supply and that of the retro-peritoneal region.

Some Observations Upon the Surgical Anatomy and Mechanism of the Colon.

By GRANVILLE S. HANES, M. D., Louisville, Ky.

Until comparatively recent years diseases of the colon and sigmoid, and the surgical anatomy of each, received but scant attention. Recently, however, much valuable information upon this subject has been developed. Robert Coleman Kemp in his work on Diseases of the Stomach and Intestines says that Dr. J. M. Mathews was the first to call attention to sigmoiditis and diverticulitis of the sigmoid.

The entire length of the large bowel in situ is found to be much shorter than when it is dissected from its attachments. An ordinary thirty-inch colon tube has sufficient length to extend around the lumen of the large bowel to the cecum. While this has not been done in the living individual it has been done in the cadaver, and radiographs of the same are on record.

It is almost universally believed that ordinary flexible colon tubes can be manipulated in such a way as to traverse the entire course of the large bowel around to the cecum. It has been proven by a number of investigators that such an achievement is impossible in the normal bowel. The average length of the sigmoid is about eighteen inches, and this being a floating portion of the large gut it is almost impossible for an instrument to pass beyond the middle half of the sigmoid. Should such be possible and the tube enter the descending colon it would be a physical impossibility for it to pass either the acute angle at the splenic flexure or the hepatic flexure. The failure of instruments to pass high into the bowel has been demonstrated by X-ray pictures.

Dr. Hanes demonstrated the difficulty in passing any instrument through the hepatic and splenic flexures by introducing a thirty-inch, No. 20, French, soft rubber cather into the caput coli in an old appendicostomy case. He failed by any kind of manipulation to pass the catheter through these flexures. The tube was allowed to remain in the head of the colon for twenty-four hours with the hope that peristalsis would carry it around, but this failed. After manipulating the second time three hours later four inches of the catheter appeared through the anal opening.

He forced bismuth solution into the head of the colon till the wall of the gut was thoroughly distended and then Dr. E. Bruce made a skiograph. No regurgitation into the ileum occurred. This experiment was repeated a number of times with the results as above given. If the ileo-cecal valve allows no reflow into the ileum then exceedingly large amounts of water injected into the bowel are retained in the large gut, and not a part of the amount passed into the small bowel as is supposed by some.

In an old appendicostomy case, with the patient on the left side, coal-oil was poured into a colon tube that had been introduced three inches into the rectum. In six and a half minutes the oil was flowing out of the appendicostomy opening. The amount employed was thirty ounces. This clearly demonstrates that liquids will easily pass around the entire colon without flowing through a tube. The point is also made that coal-oil is much less irritating to the mucosa than plain water or ordinary aqueous solutions.

The capacity of the large bowel in situ was measured by temporarily closing the opening of an appendicostomy case and allowing coal-oil to flow into the rectum as long as the patient could tolerate it. At a later date the same experiment was made by allowing oil to flow into the head of the colon. About the same amount of oil was received in each case. After making the same experiments in other cases it was decided that the average large bowel had a capacity varying between fifty and sixty-four ounces.

The capacity of the rectum was ascertained by inverting the patient and placing a colpeurynter at the junction of the sigmoid and rectum, just within the sigmoid. The colpeurynter was then distended with air until no fluid could pass into the sigmoid. Coal-oil was allowed to flow into the rectum till no more could be received. It was then drawn off with a catheter and the average amount was found to be between fourteen and seventeen ounces.

He insists that the Inverted Position (Hanes) is much to be preferred by both patient and operator when any kind of illuminating instruments are to be employed in the rectum or sigmoid.

Have We an Ideal Operation for Internal Hemorrhoids?—A New Hemorrhoidal Clamp.

By A. B. COOKE, M. D., Nashville, Tennessee.

An ideal operation for internal hemorrhoids must embody the five following surgical principles and precepts:

1. Complete hemostasis.

2. Immediate closure of the operative wounds.
3. Preservation of the function of the parts.
4. Permanency of cure.
5. Due consideration of the factors of safety, simplicity of technic, time required for recovery, and the amount of post-operative discomfort.

The ligature operation violates principle 2.

The clamp and cautery operation falls short with reference to the fourth class of principles in each of its several points.

The Whitehead operation violates principles 1, 3 and 5, and is, moreover, an unnecessary and unjustifiable procedure.

The operation by means of Earl's clamp is a modification of the Whitehead method and a vast improvement upon it, but is apt, likewise, to violate principle 3.

Pennington's enucleation operation is open to criticism under classes 1 and 5 of the surgical principles. In spite of its ingeniousness, it is dangerous.

The Clamp and Suture operation described by the author fulfills all conditions and is entitled to be considered the most nearly ideal of any yet devised.

A new hemorrhoidal clamp designed to facilitate the last named operation was presented and strongly recommended.

Etiology of Constipation.

By HORACE HEATH, M. D., Denver, Col.

Dr. Heath mentioned two groups—miscellaneous and mechanical. Under miscellaneous, the author regarded heredity as unimportant, but attention was called to the faulty instruction of children in certain families. He stated that the constipation of infancy was due to undeveloped muscles; and of old age, to inactivity and atonicity.

Under mechanical causes he considered,—diet, sedentary life, abnormal positions, angulations, coloptosis, and hypertrophy of the rectal valves.

The predisposing diseases mentioned were colitis, stricture, proctitis, fissure, hemorrhoids, fistula, polypi, enlarged prostate, and malignant growths.

Physiology of Constipation.

By SAMUEL T. EARLE, M. D., Baltimore, Md.

In reviewing the Physiology of Constipation in the symposium read before the American Proctologic Society, June, 1911, Earle calls attention to the sensibility of the alimentary canal in connection with its bearing on constipation. It has been shown that the stomach and intestines are quite insensitive to tactile and thermal stimuli, but that the esophagus and anal canal are sensitive. The whole of the alimentary canal is, however, sensitive to distension, which produces at first discomfort and subsequently pain. The rectum appears to be more sensitive than the rest of the intestines to distension, so that a large fecal mass produces more discomfort when lodged in the rectum than in any other situation. As a result of this, the normal accumulation of feces in the pelvic colon is unaccompanied by any discomfort, whereas, the entry of feces into the rectum at once produces a sensation, which acts as a warning that defecation is necessary. The discomfort produced by the presence of a large mass of feces in the rectum is partly due to the pressure it exerts on the upper extremity of the sensitive anal canal. Prolonged retention of feces in the rectum leads to a blunting of its sensibility, so that comparatively little local discomfort is present in most cases of confirmed constipation. But in acute cases or cases of recent origin, in which the rectum is distended with feces much discomfort and occasionally severe pain is experienced. On the other hand, even a very large accumulation in the pelvic colon produces little or no discomfort in the intestine itself.

A large fecal accumulation in the rectum presses directly upon the anterior primary divisions of the third, fourth and fifth sacral nerve routes, as they emerge from the sacral foramina. It may therefore lead to neuralgic pain referred to the sacro-coccygeal region. It is liable to cause suffering more from its constant presence than its severity; it is often as severe when the patient lies down as when he takes exercise, but some relief follows flexion of the lumbar spine. The muscles of the buttocks and back of the thigh, which receive a small part of their sensory and motor supply from the third sacral nerve route, may be the seat of similar pain. Neuralgic pain or parasthesia, in the form of tingling or a sensation of heat or cold may occur, in the course of the sciatic nerve, in the back of the thigh, and occasionally the sensation of cramp in the calf is produced. Pain is also occasionally felt in the hip-joint, it receives part of its nerve supply from the third sacral nerve. The roots which supply the muscles of the front of the thigh are situated out of reach of the distended rectum, so that in the exceptional cases in which pain is produced by constipation in this situation, it must be due to pressure exerted by a fecal mass in the iliac colon on the anterior crural nerve; and is accordingly only observed on the left side.

That these neuralgic pains are probably due to the direct presence of a large and hard mass of feces, on the sacral nerve-routes is shown by their instantaneous disappearance on completely evacuating the rectum by anemata, a form of treatment which was already advocated for sciatica by Columnius of Naples at the end of the eighteenth century.

Possibly the erections and seminal emissions, and the frequency of micturition and nocturnal incontinence, which occasionally result from large fecal accumulations in the rectum, are due to direct irritation of the third and fourth sacral nerves, and are not reflex in nature. The spasm of the sphincter ani and levator ani muscles, which has already been described as an occasional complication of the fecal impaction in the rectum, which occurs in constipation, may perhaps be in part due to pressure on the fourth sacral nerve routes.

Neuralgia of the testicles in men and dysmenorrhea in women are sometimes increased by the direct pressure in the rectum on the nervous supply of the testicles and uterus respectively.—Arthur F. Hertz, on Constipation.

Bacteriology and Urinary Findings of Constipation.

By JOHN L. JELKS, M. D., Memphis, Tenn.

The author advances no new theories but expresses his views of the importance of both chemical and microscopical investigation in connection with clinical proctology, and the value of these examinations in cases of atonic constipation.

He refers to the importance of either finding, or eliminating, the presence of intestinal parasites that are known to produce lesions in the intestinal coats and ports of entry of bacteria or their toxins. He expresses the belief that the destruction wrought to the sub-mucous structures, the infiltration of plastic material and the contracting, distorting, scarred portion of the bowel, as also the consequent destruction of, and interference with the secreting glands, their ducts and the nerve supply may become important factors in the atonic condition of some patients.

The author believes it is important to make microscopic examinations in all cases of this character,—both of the crude and washed specimens, and of scrapings from the intestinal wall or from any lesion found in it. He also examines the urine chemically, and miscroscopically, believing this important, owing to the relationship and association of diabetes, kidney insufficiency and diseases of the kidney with cases of atonic constipation.

These examinations of the urine aid in determining the proper course of treatment, especially is this true when indicanuria, casts and sometimes traces of albumen, indicate the vicarious overwork of the tired and irritated kidneys, as also the intestinal

fermentation and coprostatic auto-intoxication, which results in some cases.

The author refers to the importance also of examination of the stomach contents after test meals have been given as these may furnish in some cases a clue to etiologic factors.

Blood examinations he finds quite important in determining the amount of opsonic resistance as also for finding infections in the blood, which matters by lowering the vitality may become factors in the atonic conditions which were being discussed.

Pathology and Diagnosis of Constipation.

By WM. M. BEACH, M. D., Pittsburg, Pa.

Pathology of constipation is naturally considered under two general heads, namely:

1. Stasis due to altered secretions;
2. Stasis due to mechanical obstruction.

The first may be the result of neuroses, and acute fermentative indigestion, or a bacillary infection. The anerobes may attack the contents of the bowel or the gut wall itself, leading to varying degrees of inflammation in the colon—as ulceration, hypertrophic and atrophic catarrh. The colon impaired functionally or traumatically leads to stasis and consecutive inhibition of the fecal excursion. Such impairment further disturbs the physiologic lines of defence against the auto-intoxications,—as

(a) the intestinal mucosa, itself;
(b) the liver, and
(c) the antitoxic glands.

Collateral with these phenomena in constipation, are such factors as cholelithiasis, hypochlorhydria, cholangitis and appendicitis, as altered secretions incident to coprostasis.

Mechanical obstructions to be reckoned with include,—

1. Entroptosis or Glenard's disease;
2. Gastroptosis;
3. Dilatation of the colon:
4. Certain extra-mural and intra-mural sources of obstruction,—as pelvic tumors and displacements, nephroptosis, enlarged glands, intussusception, malignant disease, etc.;
5. Acute angulation at the recto-sigmoid junction, hypertrophy of O'Bierne's sphincter, and stiff rectal valves;
6. Disease in the anal canal.

Diagnosis resolves itself into an analysis of the above conditions; to differentiate acute or chronic obstruction and the ordinary functional stasis which may also be accompanied by the various forms of colitis.

Sequelae of Constipation, Including Auto-Intoxication.

By ALFRED J. ZOBEL, M. D., San Francisco, Cal.

In this paper the writer mentions many of those conditions which seem to have their origin in chronic constipation with auto-intoxication. He states that experimental evidence has not as yet demonstrated that they actually do so, but close observation and clinical experience tend strongly to confirm the theory.

He writes that while all constipated individuals do not necessarily suffer from those symptoms ascribed to auto-intoxication, yet, n his experience, most patients with auto-toxic symptoms are constipated. This may be without their knowledge, and they often deny in good faith that they are so; but proctoscopic examination generally proves the sigmoid and rectum to be loaded with fecal matter.

A report is given of the proctoscopic observations made on a number of cases of hypertrophic arthritis. In almost every instance the lower bowel was found filled with a fecal mass, although most of the patients positively stated that they had had an evacuation within an hour or two previous to the time of examination. Thorough colonic flushings invariably brought about relief from pain, and in time marked improvement in their general condition.

These observations are in line with the theory advanced by various authors that arthritis reformans may be due to intestinal auto-intoxication.

Mention is made of the various muscular, arthritic, and neuralgic pains caused by absorption of toxins from the bowel. These are often misunderstood, and treatment instituted for rheumatism.

Congestion, irritation, and various disturbances, both functional and organic, of the uterus, tubes and ovaries in the female; the vesicles, urethra, and prostate in the male; and the bladder in both; may result from chronic constipation. This is due both to the proximity of these organs to the lower bowel and to their close physiological relationship.

It is noted that albuminuria may arise from intestinal stasis, and mention is made of the opinion advanced by various clinicians that a nephritis may even be caused thereby.

The role of constipation with auto-intoxication as causal factors of epilepsy, neurasthenia, and various mental conditions, as claimed by certain well known and competent observers, is stated here without comment.

The influence of these conditions on the heart, blood-vessels, and the blood; and its effects on the eye, ear, nose and throat are dilated on in this paper, and in support of these statements quotations are culled from the literature that has appeared on this subject during the past five years.

The writer further briefly mentions a few more of those conditions that are supposed to arise from chronic constipation with auto-intoxication, and concludes by agreeing with the trite observation of Boardman Reed that, "when we except the exanthems, malaria, syphilis, tuberculosis, and the diseases caused by traumatisms, by metallic poisons, and by a few other toxic agents or infections from without, practically all the remaining maladies which afflict us and cut short our lives are now directly or indirectly traceable to auto-intoxication."

Non-Surgical Treatment of Constipation.

By DWIGHT H. MURRAY, M. D., Syracuse, N. Y.

Dr. Murray stated that chronic constipation and its results was one of the worst of the foes to a healthful human race.

He had never known any medication to cure cases of constipation. As primary causes of all cases of constipation he considered carelessness, ignorance, and laziness to be of first importance. The whole medical profession should teach their clientele how to care for themselves, and to train their children in order that constipation could be eliminated by educational and prophylactic methods.

Medicines for the use of constipated people have increased until their number is almost countless. Advertisements which extol particular cathartics exploited by this or that pharmacist, are well nigh bewildering.

He makes the claim that all cathartics finally leave those who use them worse than before. He does not entirely interdict the use of drugs, as there are cases where they must be used, but almost wholly for temporary relief. He says that a mistaken notion exists in the minds of the laity that the feces is composed largely of debris of food. This, however, furnishes only a comparatively small portion of the fecal mass, the larger portion being deposited in the large intestine as the ash resulting from the products of metabolism.

He mentions various exercises, massage, deep breathing, climbing, rowing, electricity, etc., as being helpful in the treatment and cure of these cases.

Sigmoid injections of pure olive oil, castor oil or medicinal paraffin oil were recommended as aids in the treatment.

He said that hours could be spent over the various drugs and methods in detail—after it all we would

be obliged to say, that eternal vigilance as to regularity on the part of the patient must be exercised or a cure would not result.

The keynote of his paper is, education and regularity as to periodicity of the first daily stool. Finally he believed that the whole profession had a profound duty to perform for mankind in an educational way for emancipating the race from this insidious foe.

The Surgical Treatment of Chronic Constipation.

By LOUIS J. HIRSCHMAN, M. D., Detroit, Mich.

Constipation is divided into two great classes; the one class being due to a lack of functional activity, i. e., dietetic error, improper habit, neural or trophic influences. The other class, which some of us have been pleased to designate as obstipation includes all cases whose impaired activity is due to mechanical interference with the normal peristaltic movements and expulsive function of the bowel.

Obstipation, or obstructive constipation may be caused by:

(1) The presence of any foreign body, occlusion, contracture, hypertrophy or accumulation in the intestinal canal.

(2) Displacements, acute angulations, distensions, neoplasms, adhesions or compressions of the bowel.

(3) Developmental defects and congenital deviations from normal.

Inasmuch as the surgical treatment of constipation, due to easily recognized local conditions, is obvious, they are dismissed with mere mention. Coloptotic constipation represents such a large percentage of cases of mechanical constipation that its discussion involves the most important field of surgery in the treatment of constipation. All patients with ptotic colons are not constipated, nor do all constipated patients suffer from coloptosis. There must be in addition to ptosis of the cecum, transverse or sigmoidal colons, a condition of functional inactivity due to atony of the bowel muscle.

Suspensions of ptotic colons by means of fixation by adhesions to the abdominal wall are unnatural and interfere with peristalsis. Restoration should be accomplished by shortening the natural support, —the mesentery. Lateral anastamoses between the most dependent loops of ptotic bowel is sometimes indicated. Above all, massage, both abdominal and internal rectal, is of primary importance in restoring function, and should be used along with either dietary or hygienic measures to restore bowel function.

Cancer of the Rectum.

By J. RAWSON PENNINGTON, M. D., Chicago, Ill.

I take it we are all agreed as to the increasing frequency of cancer. At least it seems to me no other conclusion can be drawn from the following figures: According to the 12th U. S. census, cancer appears to have increased 12.1 deaths per 100,000 population in the previous decade. In Great Britain, so we learn from the work of Roger Williams, the deaths from cancer increased from 177 per million in 1840 to 885 per million living in 1905. Williams points out that while the population barely doubled from 1850 to 1905, the mortality from cancer increased more than six fold. Nor is the increase confined to the United States and Europe, it holds good for Japan, India and even for uncivilized countries. In short, cancer is one of the several diseases which is apparently increasing, by leaps and bounds, in spite of our boasted progress in medicine, surgery and hygiene. Apart from the increased prevalence, the present death rate from malignant diseases is something dreadful to contemplate. Our anxiety in regard to malignant disease of the rectum is pardonable when we reflect that a good proportion of cancers involve this region. Williams found that 9.6 per cent. in males and 5.3 per cent. in females were located in the rectum. Is there anything that can be done to check this foe? The writer believes there is, and that this Society may be made a powerful factor for good in such a crusade. In Germanay a similar crusade has been started against cancer of the uterus by Winters, agitating the subject both among the profession and the laity. It is estimated that the number of cases of inoperable cancer of this organ has been reduced over 30 per cent. as a result of calling attention to the early symptoms. Of the 2914 cases of rectal cancer in the male referred to by Williams 2592 patients were over 45 years of age and 2180 of the 2533 female patients. In the male sex again the average age, at which the onset was noted, was 49.7 years, the minimum being 16.75 and the maximum 74; while in the female sex the average was 50.4 years with a minimum of 21.8 and a maximum of 88 years. This brings me to the crux of my argument, that every person who has reached the so-called "cancerous age" should be examined periodically for evidence of commencing carcinoma not necessarily of the rectum alone but in the female for example, of the uterus also.

In 120 resections of the rectum for malignant disease, W. J. Mayo observes: "It is an unfortunate fact that, in the majority, cancer of the rectum is not recognized in time to obtain a radical cure." I said a moment ago that cancer in the beginning is a local disease. This granted, then early and thorough removal must lead to a cure. It has been shown that a large proportion of malignant growths originate in scar tissue. In cancer of the stomach, for example, the Mayos found that no less than 62% showed evidences of a previous ulcer. The rectal cancer patients frequently give a history of previous operations on the part. Does the cancer occur in the scar left from an operation for hemorrhoids done by one of the commoner methods—ligature, clamp and cautery, or some other technic leaving much scar tissue and sometimes stricture? May it not be occasionally engrafted on the scar following the usual incision method of operating for fistula? Here is a suggestion for us in our own work, secure smooth healing by resorting only to such procedures as leave the minimum of cicatricial tissue, hence, the least possible nidus for possible mischief in the future. With the co-operation of the public it seems to me we should learn much about cancer in the early stages. To educate the public we must—as has been well said—"organize, systematize, deputize, energize, supervise and economize." The field is broad and the opportunity is at hand. Shall we grasp it?

Malformation of Rectum and Anus, with Report of Case.

By DONLY C. HAWLEY, A. B., M. D., Burlington, Vt.

The facts of modern embryology explain a majority, but not all developmental defects of the rectum and anus.

M. B., female, age 4 weeks, came under my observation in April, 1910. She had an imperforate anus, the rectum opening into vagina in the upper half of the recto-vaginal septum, opening one-half by one-eighth inch in size, the longer diameter

transverse, was evidently supplied with a sphincter, as the child had three or four well controlled movements daily. Anal depression was present and the vulva and vagina were normal, except as noted. The presence of uterus was normal or otherwise not demonstrated. There was no distension of rectum, no impulse and no prominence in perineum. The child was well nourished and otherwise normal. Operative interference postponed. The child is at present well and is 13 months old and weighs 22 pounds.

While this defect is sometimes seen, many cases reported, as atresia and vaginalis, are no doubt in reality imperforate anal canal with vulvar outlet, a malformation admittedly of common occurrence.

Cases in which intestine opens well up in vagina are not accounted for on embryologic grounds, the two structures being embryologically dissimilar and independent.

Pruritus Ani, with Report of Cases.

By DONLY C. HAWLEY, A. B., M. D., Burlington, Vt.

In this discussion I do not refer to cases due to intestinal parasites, errors in diet, etc., in which the pruritus is relieved by proper attention to the causative condition, nor so much to the symptoms as to the pathologic condition of the skin and nerve endings, which condition is pathognomonic.

The nearly constant local cause of pruritus ani is abrasion and ulceration of the anal canal, accompanied by blind sinuses underneath or fissures in the muco-cutaneous lining.

Further, some cases are associated with chronic proctitis, which may be a factor in producing or increasing the anal abrasions or ulcerations.

The treatment I have adopted is as follows:

With the patient well anesthetized, the anal canal is dilated, and the ulceration, together with the sinuses and fissures, are thoroughly cauterized with the Paquelin cautery, and also the entire area of chronic dermal inflammation.

My aim is to destroy ulcerated areas, the thickened and altered skin and the pathologic condition of the terminal nerve fibres.

Case I. S. H. E., aet. 62, came under my observation June, 1908. He had suffered with rectal troubles for 45 years. Twenty years ago he was operated on for fissure or fistula, was not certain which. He has had almost intolerable pruritus for eight years, and for the past year it has been so constant and unbearable, especially at night, that he has become a nervous wreck, and has lost 40 pounds in flesh and has been unable to continue his business.

Diagnosis.—Chronic pruritus ani. The skin was inflamed, soddened and thickened over a large area about the anus, with many deep cracks, and four or five ulcerations and abrasions in anal canal. Treatment as outlined. Result, cure and no return up to present time.

Case II. W. A., male, aet. 38. History of pain in rectum for 20 years, and of severe and intolerable pruritus.

Diagnosis.—Chronic pruritus ani. There was a large ulceration in anal canal and three or four blind sinuses, with an area of white brittle and infiltrated skin with large cracks about anus. Operation, same as in Case No. I. Result, cure.

Other cases less severe have been operated upon during past three years, with satisfactory results. The treatment outlined is not new nor original, having been advocated by Mr. W. Mitchell Banks, and practiced by Mr. Fred C. Wallis. Ball's operation is designed to render anesthetic the skin over the undercut area. The operation described accomplishes the same end and besides destroys lesions in anal canal. The former operation has resulted in extensive sloughing. To the latter no such danger attaches.

A Paper; Intestinal Stricture Following Ileo-Rectostomy—Report of a Case Was Read.

By FRANK C. YEOMANS, M. D., New York City, N. Y.

J. X., a man 46 years of age, was always strong and well but suffered from severe constipation of many years' standing. In October, 1909, an anterior sigmoidopexy was proposed for "prolapse of the sigmoid." Temporary relief followed, but three months later "peritonitis" developed. The same surgeon operated again, freed numerous adhesions, divided the ileum just proximal to the colon, closed the abnormal end and implanted the oral end of the ileum into the rectum. Relief of the constipation was prompt but when he first consulted Dr. Veomans, in July, 1910, it had returned in an obstinate form with all the symptoms of a marked auto-toxemia superadded.

The proctoscope passed easily, but no opening could be discovered in the rectum or the sigmoid. An excellent radiograph, by Dr. L. G. Cole, proved the colon and sigmoid to be unobstructed.

Concluding that the feces, following the path of least resistance, were accumulating in the colon, Dr. Yeomans did an appendicostomy at the New York Polyclinic Hospital, December 16, 1910. Irrigations through the appendix relieved all symptoms for ten weeks. Constipation and toxemia then returned, however, and he performed an exploratory laparotomy March 14, 1911. The ileum ran down into the left side of the pelvis and was lost in a mass of dense adhesions. A broad lateral anastomosis was made between the ileum, just above the adhesions, and the sigmoid. The patient reacted well from the operation, but developed a double pneumonia, 18 hours later, to which he succumbed on the fifth day. The urine was suppressed the last 24 hours of his life. The bowels moved on the second day, and, thereafter, three or four times daily. At the autopsy no peritonitis was found. The specimen removed, consisting of ileum, sigmoid, and rectum intact, showed perfect union of the recent lateral ileo-sigmoidostomy. The remarkable feature of the old end-to-side ileo-rectostomy was that the opening was so constricted that it would scarcely admit a 16 F. catheter and physiologically amounted to a stricture.

The noteworthy features of the case were: 1. Reverse peristalsis of the colon, evidenced by the large quantities of feces expelled by the irrigations through the appendicostomy. 2. The radiograph was valuable in demonstrating a patent sigmoid and colon, thereby proving that the obstruction was in the small intestine. 3. Failure of the proctoscope to reveal the site of the opening does not discredit the diagnostic value of that instrument but shows the extreme degree of contraction of the opening. 4. The many actions of the bowel signify clearly that the physiological function would have been permanently restored had the patient survived the pneumonia. The practical lesson derived from a study of the case is that lateral anastomosis is superior to end-to-side union, especially in the presence of inflammation.

Syphilis of the Ano-Rectal Region.

By LEWIS H. ADLER, Jr., M. D., Philadelphia, Pa.

The author related the history of two cases of syphilis in which no outward visible effects of the patient's grave condition existed, except about the anus. In both instances, the anus was surrounded by syphilitic condylomata; the parts were bathed in a fetid sero-purulent discharge and the patients' mouths were affected with mucous patches. In one case the patient was markedly improved by the use of salvarsan and the other one improved under the ordinary mercurial treatment, but disappeared from observation before a cure culd be effected.

The writer then took up the consideration of the usual manifestations of the disease as affecting the localities under consideration, stating that the primary lesion,—always a chancre,—occurs about the anal region much more frequently than is usually

supposed. That chancre of the rectum proper, in this country, is a very rare occurrence. Where sodomy and other unnatural vices are practiced, infection may, and, possibly does occur with greater frequency. That females are oftener affected than males and while the occurrence of the initial lesion about the anus or within the rectum of men, is almost positive evidence of the practice of sodomy; in women, the possibility should be remembered of the infection of these parts arising through contact with the male organ, or from the vaginal discharges.

That the diagnosis of all doubtful cases of syphilis can now be definitely determined when the patient's blood shows a positive Wassermann reaction and by finding the presence of sphirocheta pallida.

Attention was called to the fact that cases of ano-rectal syphilis develop the usual symptoms of the disease as when it affects other parts of the body, and, next to the mouth and throat, the anus is the most frequent site for mucous patches. Attention was called to the hereditary or congenital form of the disease; and, among the tertiary lesions, the following principal varieties were enumerated:—Gummata; destructive ulceration; stricture; ano-rectal syphiloma, and, proliferating proctitis. The article concluded with a brief consideration of the treatment of the disease in which attention was directed to the necessity of care being exercised in looking after the hygiene in all its phases; that the constitutional treatment of the disease should not be commenced until a positive diagnosis is established; that as no one form of mercury, or any one of the various methods of its administration may be employed successfully in all cases, the individual requirements of each person should be the guide. Ehrlich's remedy,—salvarsan,—had in several instances been employed with excellent results, but the author would not depend upon its employment alone, believing that mercury should supplement its use. In the use of salvarsan, it was advised that no one treat patients with it, except those specially trained in its preparation and administration.

Foreign Bodies in the Rectum.

By T. L. HAZZARD, M. D., Pittsburgh, Pa.

The paper consisted mostly of a recital of four recent cases of foreign bodies in the rectum. Two were in children, in which the substances were accidentally swallowed, and the others were adults who introduced the bodies directly into the rectum through some perversity:—

Case 1. Baby girl, two years old. Referred for dysentery of three months' duration. The chief symptoms being bloody stools, mucus and tenesmus. No digital or other local examination had previously been made. Examination with the little finger showed the presence of something lying across the bowel, low down. A guarded pair of scissors was introduced and this body was easily cut in half and removed. It proved to be a match, or at least nearly two-thirds of one. Although the ends of this match were firmly fixed in the sides of the intestine, no abscess followed. Recovery was rapid and uneventful.

Case 2. Boy, a little older than the first case. The symptoms, conditions and procedure were the same as the preceding case but the foreign body was a bone from a frog's leg. These cases show the necessity for rectal examinations. In one case a bacterial microscopical test had been made but was rather misleading than otherwise.

Case 3. Self introduction into the rectum of a prescription bottle, a "Baltimore oval" 3 oz. The mouth was upward. After considerable trouble it was removed by means of a blunt hook. It had been in the bowel for three days. No anesthetic necessary. The case progressed without any untoward incident. He gave no reason for his action, and no questions were asked, as he would not have told the truth.

Case 4. Adult, aged 45. Had been a cow-puncher. At present has no occupation. Came to Allegheny General Hospital. Examination showed the presence of a very thin beer glass, 2 inches wide, at the top, and 3½ inches tall. Sphincters contracted. No bleeding and but little discomfort. In attempting to remove it it was broken. After it was extracted there was considerable bleeding from the rectum. He developed pelvic peritonitis and a rather large tumor developed in the left iliac region. This passed away and he was discharged in about three weeks, not altogether well of the pelvic pains. General treatment in all cases was rest in bed, with frequent washing of the bowel with a 1 per cent solution of creoline and normal salt.

The Limitations of the Use and the Methods of Employing Local Anesthesia in Rectal Surgery.

By LEWIS H. ADLER, Jr., M. D., Philadelphia, Pa.

The author quoting from a recent article of a distinguished proctologist states:—"Patients seriously object to a general anesthetic and because of this and the fact that most minor ano-rectal operations can be painlessly performed under local anesthesia induced by sterile water, or a one-eighth of one per cent. eucain solution, I have discarded general narcosis in about eighty per cent. of my rectal operations."

In taking exception to this general statement he questions the wisdom of sending it broadcast and advocating a method which in the hands of one not particularly skilled in rectal work would in his opinion only lead to disaster. He calls attention to the water-logging of the tissues, when sufficient anesthetic be used, whether cocain, eucain, sterile water, or other agents and to the subsequent retarding of the recovery of the patient and the danger of hemorrhage from allowing patients to be about on their feet, citing a case which proved conclusively the force of his arguments.

The author claimed a thorough understanding of the underlying conditions can rarely be made without the aid of general anesthesia. The latter when administered by a competent anesthetizer is not attended with any more danger or risk than the indiscriminate employment of local anesthesia. He calls attention to the fact that it is essential to remove the anesthetic when the sphincter is divulsed, as deep inspiration thus induced would cause too much of the drug to be inhaled suddenly, and might cause alarming or fatal results. Rectal diseases, which may be treated under local anesthesia he considers under two divisions:—(1) Those admitting of office treatment; (2) those requiring treatment at home or in a hospital. In the opinion of the author external piles or other excrescences around the anal region, some fisures-in-ano, and abscesses (of not too large an extent), are the only affections coming within the range of operations which can with propriety be performed in the office under local anesthesia. He warns the operator that trivial fistula, often have diverticulae and are not readily discoverable except under general anesthesia. Under the second heading he speaks of internal colostomy and internal hemorrhoids and warns the operator that the temperament of the patient must always be taken into account. Highly nervous patients will not stand manipulation of the intestines and the abdominal muscles are apt to be rigid. The author mentions the different drugs used in local anesthesia, the vibratory method of Hirschman, the methods used in getting the parts anesthetized and the after treatment. The trend of the article is not to throw cold water on the valuable procedure of local anesthesia, but to insist that the cases must be suitable and in the hands of men of experience.

BOOK REVIEWS

A Handbook on Practical Treatment. By many writers. Edited by John H. Musser, M. D., LL.D., Professor of Clinical Medicine in the University of Pennsylvania, Philadelphia, and A. O. J. Kelly, A. M., M. D., Assistant Professor of Medicine in the University of Pennsylvania, Philadelphia. Volume II, Cloth. Price, $6 net. Pp. 865, with 103 illustrations. Philadelphia. W. B. Saunders Co. 1911.

This volume, the second of the three volumes to be published by the authors, treats of forty-three subjects, written by twenty-eight contributors.

In the introductory article by Sir Clifford Allbut is a careful discussion of the principles of cardiac therapeutics. This is followed by a brief description, and mode of treatment, of forms of acute cardiac disease, including endocarditis, pericarditis, and hemopericardium. Much stress is laid by the author on rheumatism as a cause of endo and pericarditis, and the value of frequent heart examinations. Special reference is made to the tonsils as a focus of infection. He advises the use of salicylates combined with the bicarbonate of soda, in large doses, emphasizes the importance of position and the care of the tonsils and throat. Much space is given to myocarditis, with a discussion of its physical signs, of the basis of treatment, and of the failure of the heart from poisoning of the muscular fibers. In acute cardiac disease he uses digitalis with caution, and prefers strophanthus and caffein as a means to increase muscular tone.

In discussing chronic diseases of the heart, a general review of the more important pathological conditions are given, cardiac tests, including the Gander test described, and the latest drug therapy outlined. Several pages are given to diet, hydrotherapy, exercise, nursing, and climate. Functional diseases, chronic valvular diseases, and diseases of the arteries, concludes the section. This section covers about a sixth of the volume and demands special study.

"Typhoid Fever" by Rufus Cole is full of practical points. Prophylaxis and disinfection are well gone into. Serum therapy is outlined, with the conclusion that the various sera used at the present time possess little value. The greater part of this section is devoted to the various forms of diet advocated, with many illustrations on the technique of hydrotherapy as a therapeutic agent. The surgical complications are brought out by John M. Finney.

Hobart Amory Hare, on "Pneumonia," covers the treatment of the disease in a few pages, with far too few words on the open air treatment. With the brilliant results obtained by this method, a more thorough recognition of this phase of the treatment should be given. Diphtheria is discussed by Weaver, in a very ably written article. In speaking of the principles upon which the action of diphtheria antitoxin rests, he insists that the dose be large, and given at frequent intervals early in the disease. He speaks of the treacherousness of scarlet fever, and emphasizes the importance of care in the mildest cases.

"Tuberculosis," by Osgood Otis, covers one hundred and seventy-seven pages and is the most comprehensive article in the volume. In such a brief review not enough can be said of this important section. Along with individual and general prophylaxis he calls our attention to the various kinds of open air schools, which are aiding so much in the fight against disease. The details of open air life are exhaustive in the extreme, with descriptions of many of the large state and private sanatoria, in this and foreign countries. A general discussion on diet is given, with samples of dietaries from different institutions. The author in summing up the tuberculin treatment, considers the tolerance method advocated by Trudeau, the best method, and says that tuberculin used by carefully trained men, is indicated in the modern management of the disease.

"Syphilis" is written by two authors, J. William White, and Alfred C. Wood, and contains nothing new on the treatment of the subject. In adverttising this volume the publishers emphasized the space given to "Salvarsan" in this section, but it is brief and general, and gives neither the dosage or methods of administration. Edward Martin, speaking of the vaccine therapy in chronic gonorrhea, considers the best results, up to date, are obtained from an autogenous vaccine.

This work contains many points on the prophylaxis and quarantine in the infectious diseases, which should be helpful to the reader, and in Schamberg's contribution on "Variola" a practical discussion on these points is given. The importance he lays on vaccine in prophylaxis and treatment is also instructive.

Lewellys F. Barker, in his article on cerebrospinal fever, outlines in a concise manner the method of administration of Flexnor's serum, with a classification of the bacteria causing the symptoms.

"Plague" and "Cholera Asiatica" are under the same authorship, with the history, mode of infection and mortality of these fatal diseases.

Among the infectious diseases left to be described are "Influenza" and "Rheumatism" by Stengel, "Pertussis" and "Mumps," by McC. Hamill, and "Dysentery" by Charles F. Martin. Tropical diseases, including a well written article on "Malaria" by Roseman and Anderson, deserves special mention.

The volume ends with an article on "Animal Parasites," by Reisman, which covers admirably this field.

From the excellence of the articles, and the standard set by the authors in the volume, there is no doubt that the completed work will be one of the most valuable thus far published, and will be worthy of recommendation to the general practitioner.

H. H. Y.

Gonorrhea in the Male. By Abr. L. Wolbarst, M. D., Publisher International Journal Surgery Co., N. Y., 1911.

Wolbarst's book on "Gonorrhea in the Male" is a terse manual laden with thoroughly digested material on diagnosis and treatment. It is a well written guide picturing in a clear and concise manner the experiences of a practical specialist, who believes in conservatism.

As it is a volume affording a comprehensive survey, within a compact space, preserving all essentials, it can be safely recommended to the general practitioner.

L. G.

"What Shall I Eat?" By Dr. F. X. Gourard. Translated by F. J. Rebman. Published by Rebman Co. N. Y. 1911.

The author, like most French writers, presents his subject in an interesting manner. While covering the subject most scientifically, his style always remains graceful and his language simple. Physicians who have not the time or patience to study the larger works on dietetics, as well as those who have studied them but whose ideas are not well crystallized on the subject, will derive much pleasure and lasting benefit from this book. It is furthermore a work that can safely be recommended to laymen, healthy or sick, who are too often prone to read and follow the teachings of faddists, of such fruitarians as the Christians or of the Sinclair (here the designation faddist is ultra charitable) starvers.

R. B.

BOARD OF EXAMINERS, AUGUST SESSION.

Passed.

School of Medicine.	Date of Graduation.	Percentage.
Cal. (Ecl.) Med. Coll., Cal	5, 16, 06	77.3*
Coll. of P. & S., San Francisco, Cal	6, 8, 11	85.9
Coll. of P. & S., San Francisco, Cal	6, 8, 11	84.9
Coll. of P. & S., San Francisco, Cal	6, 8, 11	84.6
Coll. of P. & S., San Francisco, Cal	6, 8, 11	77.3
Coll. of P. & S., San Francisco, Cal	5, 19, 09	75.6*
Coll. of P. & S., San Francisco, Cal	6, 8, 11	75.4
Coll. of P. & S., San Francisco, Cal	5, 17, 06	75*
Coll. of P. & S., San Francisco, Cal	5. 20, 09	75.0
Cooper Med. Coll., San Francisco, Cal	5, 12, 11	93.1
Cooper Med. Coll., San Francisco, Cal	5, 12, 11	89.9
Cooper Med. Coll., San Francisco, Cal	5, 12, 11	89.6
Cooper Med. Coll., San Francisco, Cal	5, 12, 11	89.0
Cooper Med. Coll., San Francisco, Cal	5, 12, 11	89.0
Cooper Med. Coll., San Francisco, Cal	5, 12, 11	87.9
Cooper Med. Coll., San Francisco, Cal	5, 12, 11	87.7
Cooper Med. Coll., San Francisco, Cal	5, 12, 11	87.7
Cooper Med. Coll., San Francisco, Cal	5, 12, 11	87.5
Cooper Med. Coll., San Francisco, Cal	5, 12, 11	87.5
Cooper Med. Coll., San Francisco, Cal	5, 12, 11	87.1
Cooper Med. Coll., San Francisco, Cal	5, 12, 11	87.0
Cooper Med. Coll., San Francisco, Cal	5, 12, 11	86.8
Cooper Med. Coll., San Francisco, Cal	5, 12, 11	86.2
Cooper Med. Coll., San Francisco, Cal	5, 12, 11	86.1
Cooper Med. Coll., San Francisco, Cal	5, 12, 11	86.1
Cooper Med. Coll., San Francisco, Cal	5, 12, 11	84.2
Cooper Med. Coll., San Francisco, Cal	5, 12, 11	84.1
Cooper Med. Coll., San Francisco, Cal	5, 12, 11	82.2
Cooper Med. Coll., San Francisco, Cal	5, 6, 10	82.1
Cooper Med. Coll., San Francisco, Cal	5, 12, 11	81.5
Cooper Med. Coll., San Francisco, Cal	5, 5, 10	81.1***
Cooper Med. Coll., San Francisco, Cal	5, 5, 10	79.9***
Hahnemann Med. Coll. of the Pac., S. F., Cal	4, 28, 11	88.2
Hahnemann Med. Coll. of the Pac., S. F., Cal	4, 28, 11	84.1
Hahnemann Med. Coll. of the Pac., S. F., Cal	4, 28, 11	83.3
Hahnemann Med. Coll. of the Pac., S. F., Cal	4, 28, 11	82.5
Hahnemann Med. Coll. of the Pac., S. F., Cal	4, 28, 11	78.5
Hahnemann Med. Coll. of the Pac., S. F., Cal	4, 28, 11	77.0
University of California	6, 1, 11	90.4
University of California	5, 16, 11	86.9
University of California	5, 16, 11	86.5
University of California	5, 16, 11	85.8
University of California	5, 16, 11	85.8
University of California	5, 16, 11	85.2
University of California	7, —, 11	85.1
University of California	6, 1, 11	82.1
University of California	6, 1, 11	78.9
University of So. Cal.	6, 15, 11	84.0
University of So. Cal.	6, 15, 11	81.3
University of So. Cal.	6, 15, 11	80.7
University of So. Cal.	6, 15, 11	77.9
University of So. Cal.	6, 26, 08	75**
University of So. Cal.	6, 15, 11	75.0
Atlanta Coll. of P. & S., Ga	4, 1, 99	71.9 plus 5-76.9
Baltimore Med. Coll., Md	4, —, 96	84.0 plus 5-89.0
Cornell Univ. Med. Coll., New York	6, 14, 11	81.4
Coll. P. & S., Chicago, Univ. of Illinois	4, 18, 00	85.6 plus 5-90.6
Coll. P. & S., Chicago, Univ. of Illinois	5, 20, 02	81.4
Coll. P. & S., Chicago, Univ. of Illinois	4, 3, 94	76.1 plus 5-81.1
Coll. P. & S., Chicago, Univ. of Illinois	4, 20, 97	75.0 plus 5-80.0
Coll. P. & S., Chicago, Univ. of Illinois	6, 7, 10	78.8
Coll. P. & S. of Columbia Univ., New York	5, —, 09	90.2
Coll. P. & S. of Columbia Univ., New York	10, 19, 96	76.3 plus 5-81.3
Ensworth Med. Coll., Missouri	5, 2, 08	84.6*
Georgetown Univ., Med. Sch., D. C.	6, 14, 11	85.7
Georgetown Univ., Med. Sch., D. C.	6, 14, 11	84.6
Geo. Washington Univ., Washington, D. C.	6, 3, 08	75.0
Harvard Univ., Mass.	2, 23, 10	86.7
Harvard Univ., Mass.	6, 30, 09	86.5
Harvard Univ., Mass.	6, 28, 11	80.7
Johns Hopkins Med. Sch., Md.	6, —, 11	89.9
Johns Hopkins Med. Sch., Md.	6, 9, 08	85.8
Johns Hopkins Med. Sch., Md.	6, 13, 11	83.3
Long Island Coll. Hosp., N. Y.	5, 18, 98	71.1 plus 5-76.1
Miami Med. Coll., O.	6, 1, 08	79.2*
Miami Med. Coll., O.	—, —, 90	†

Medico-Chirurgical Coll. of Philadelphia	6, 3, 11	77.4
Missouri Med. Coll., Mo	3, 24, 96	75.0 plus 5-80.0
Northwestern Univ. Med. Sch., Illinois	6, 14, 11	90.4
Northwestern Univ. Med. Sch., Illinois	6, 9, 09	84.1
Northwestern Univ. Med. Sch., Illinois	6, 14, 11	82.6
Northwestern Univ. Med. Sch., Illinois	6, 14, 11	79.1
Northwestern Univ. Med. Sch., Illinois	6, 16, 04	77.6
Ohio Med. Univ., Ohio	4, 5, 98	79.8 plus 5-84.8
Rush Med. Coll	6, —, 99	88.8 plus 5-93.8
Rush Med. Coll	5, 26, 97	86.2 plus 5-91.2
Rush Med. Coll	12, 20, 09	90.6
Rush Med. Coll	2, 21, 82	74.9 plus 10-84.9
Rush Med. Coll	6, 21, 00	79.2 plus 5-84.2
Rush Med. Coll	6, 21, 00	77.8 plus 5-82.8
St. Louis Univ. Sch. of Med. Mo	6, 7, 11	77.2
St. Louis Univ. Sch. of Med. Mo	6, 7, 11	77.0
St. Louis Med. Coll. or Med. Dept. Wash. Univ. Mo	4, 29, 97	77.3 plus 5-82.3
State Univ. of Iowa, Coll. of Homeo. Med	3, 14, 93	70.0 plus 5-75.0
Society of Apothecaries, London	1, 17, 00	75.0 plus 5-80.0
Trinity Med. Coll., Ont., Can	4, 7, 98	75.0 plus 5-80.0
Univ. of the City of New York	4, 7, 93	79.6 plus 5-84.6
Univ. of Illinois	4, 18, 00	85.6 plus 5-90.6
Univ. of Illinois	5, 20, 02	81.4
Univ. of Mich	6, —, 11	87.3
Univ. of Mich	12, —, 10	78.6
Univ. of Penn	6, 21, 11	86.6
Univ. of Penn	—, —, 99	†
Univ. of Penn	6, 16, 09	80.6
Univ. of Pittsburg, Penn	6, 15, 10	83.7
Univ. of Texas	5, 31, 10	75.0
Western Reserve Univ. Med Dept., O	6, 12, 02	75.7
Woman's Med. Coll., Penn	6, 1, 10	83.3
Failed.		
Coll. P. & S., San Francisco, Cal	6, 8 11	63.7
Coll. P. & S., San Francisco, Cal	6, 25, 02	67.1*
Univ. of So. Calif	6, 15, 11	70.1
Cleveland Homeo. Med. Coll., O	3, 22, 92	41.1 plus 5-46.1**
Coll. P. & S., Chicago, Ill	6, 5, 06	69.4
Coll. P. & S., Baltimore, Md	3, 18, 90	56.7 plus 10-66.7
Coll. P. & S., Baltimore, Md	—, —, 88	53.7 plus 10-63.7*
Coll. P. & S., Keokuk, Iowa	3, 16, 97	61.3 plus 5-66.3
Hahn. Med. Coll. & Hosp., Philadelphia	6, 2, 09	61.7
Kentucky Sch. of Med., Ky	6, 18, 91	66.3 plus 10-76.3*
Louisville Nat. Med. Coll., Ky	5, 9, 89	23.4 plus 10-33.4*
N. W. Univ. Woman's Coll., Ill	3, 1, 81	60.8 plus 15-75.8*
Pulte Med. Coll., Ohio	3, 27, 94	67.3 plus 5-72.3**
Rush Med. Coll.	2, 19, 84	58.1 plus 10-68.1
Royal Univ. of Naples, Italy	12, 18, 03	51.3
Syracuse Med. Coll., N. Y	6, —, 08	71.1
St. Louis Univ., Mo	5, 22, 06	63.4
Univ. of Athens, Greece	12, 20, 02	65.5
Univ. of Penn	6, 21, 11	71.6
Wooster Univ., Med. Dept	—, —, 80	10.1 plus 15-25.1
Osteopathy—Passed		
American Sch. of Osteopathy	6. 4, 08	78.4
Los Angeles Coll. of Osteopathy	6, 1, 11	87.1
Los Angeles Coll. of Osteopathy	6, 1, 11	83.6
Los Angeles Coll. of Osteopathy	6, 1, 11	79.5
Los Angeles Coll. of Osteopathy	6, 1, 11	79.0
Los Angeles Coll. of Osteopathy	6, 2, 10	78.3
Los Angeles Coll. of Osteopathy	6, 1, 11	77.9
Los Angeles Coll. of Osteopathy	6, 1, 11	77.9
Los Angeles Coll. of Osteopathy	6, 2, 10	76.0
Los Angeles Coll. of Osteopathy	1, 27, 10	75.6
Los Angeles Coll. of Osteopathy	1, 26, 11	75.4
Los Angeles Coll. of Osteopathy	6, 2, 10	75**
Los Angeles Coll. of Osteopathy	6, 1, 11	75.0
Los Angeles Coll. of Osteopathy	6, 2, 10	75.0*
Pac. Coll. of Osteopathy	6, 15, 11	86.5
Pac. Coll. of Osteopathy	1, 26, 11	83.0
Pac. Coll. of Osteopathy	6, 15, 11	79.2
Pac. Coll. of Osteopathy	6, 15, 11	79.0
Pac. Coll. of Osteopathy	6, 15, 11	75.8
Pac. Coll. of Osteopathy	6, 15, 11	75.4
Pac. Coll. of Osteopathy	6, 15, 11	75.0
Pac. Coll. of Osteopathy	6, 15, 11	75.0
Pac. Coll. of Osteopathy	1, 26, 11	75.0

Osteopathy—Failed.

American Sch. of Osteopathy	6, 5, 11	69.1
Los Angeles Coll. of Osteopathy	6, 1, 11	70.8
Los Angeles Coll. of Osteopathy	6, 1, 11	69.9
Los Angeles Coll. of Osteopathy	6, 1, 11	69.2
Los Angeles Coll. of Osteopathy	6, 1, 11	67.9
Los Angeles Coll. of Osteopathy	6, 1, 11	67.8
Los Angeles Coll. of Osteopathy	6, 1, 11	66.3
Los Angeles Coll. of Osteopathy	6, 1, 11	65.2
Los Angeles Coll. of Osteopathy	6, 1, 11	65.0
Los Angeles Coll. of Osteopathy	1, 27, 10	55*
Los Angeles Coll. of Osteopathy	1, 26, 11	52.4*
Pac. Coll. of Osteopathy	6, 15, 11	70.7
Pac. Coll. of Osteopathy	6, 15, 11	67.8
Pac. Coll. of Osteopathy	6, 23, 10	64.5*
Pac. Coll. of Osteopathy	6, 15, 11	62.1

Chiropractic—Failed.

Carver-Denny Chiropractic Coll., Okla	8, 15, 08	38.2

New Licentiates.

B. F. Andrews, J. A. Bacher, W. I. Baldwin, A. F. Banta, J. Y. Bartholomew, G. D. Beebe, E. J. Best, E. J. Bittman, J. B. Blackshaw, F. D. Bland, M. Bland, E. M. Boggess, C. S. Bossert, W. T. Boyd, J. B. Bradley, J. R. Brown, Robert Brown, G. C. Bryan, L. Bryan, F. J. Bryant, B. H. Bush, Edmund Butler, C. B. Caldwell, W. H. Campbell, M. F. Clark, J. M. Clarke, J. S. Cochran, J. V. Cocke, E. H. Coleman, H. A. Collings, C. D. Collins, A. Compagnon, S. Q. Coolidge, J. W. Crossan, R. L. Crum, P. J. Cuneo, F. H. Curtiss, L. Daily, P. de Obarrio L. DeVille, A. H. Domann, E. D. Downing, M. Dranga, W. P. Dresser, R. G. Duffy, H. C. Evans, C. E. Fenner, L. J. Flanagan, A. L. Fox, H. A. Gallup, V. P. Gardner, M. A. Genung, A. S. Granger, A. E. Gray, E. E. Gray, E. R. Guinan, J. A. Hadley, C. Hall, R. W. Hartwell, J. C. Harrington, A. S. Hickox, A. R. Howard, H. O. Hund, J. Jacobs, W. R. Jacobs, M. D. W. Jeffs, E. E. Johnson, I. W. Keith, M. A. J. Kinney, E. S. Kilgore, L. O. Kimberlin, F. J. Leavitt, O. Lewis, H. Lisser, R. K. Macklin, A. F. Maisch, H. H. Markel, D. L. Martin, A. M. Massie, C. K. Mathias, A. D. McCalla, L. R. McCalla, W. B. MacCracken, F. A. McManus, B. F. Miller, J. L. Miller, N. D. Morgan, J. R. Morris, J. C. Negley, J. C. E. Nielsen, A. L. Obear, M. W. Pascoe, D. Petersen, F. W. Phelps, V. H. Podstata, F. S. Ray, F. B. Reardan, J. R. Richards, J. W. Richards, H. E. Rickels, H. V. Riewel, E. H. Risley, O. T. Roberg, A. Roncovieri Jr., R. C. Ryan, F. C. Sage, S. M. Samuels, M. J. Seid, L. Shulman, H. H. Smith, N. F. Sprague, K. J. Staniford, Jas. Steinberg, V. E. Stork, A. V. Stoughton, E. C. S. Synge, F. S. M. Talbot, L. H. Thayer, D. Turney, J. Visalli, H. L. von Werthern, H. G. Watters, G. B. Wilcox, Samuel Wilson, J. M. Wolfsohn, H. R. Yakeley, A. Zuber, L. LeR. Krebs and J. J. Kyle.

†Certificate granted, account, honorably discharged surgeon. U. S. Army.

MEDICAL DEFENSE.

Philip Mills Jones,
Secy. Medical Society of the State of California,
San Francisco, Calif.

Dear Doctor:

I wish to express my sincere thanks to the State Medical Society for the able way in which your attorneys, W. W. Kaufman and H. A. van C. Lorchiana handled my defense in a malpractice suit brought against me for $20,450. The jury brought in a unanimous verdict in my favor on the first ballot.

Although the trial occupied the attention of the Superior Court for three days, it did not cost me a cent. The feeling of having high class counsel to the courts of last resort was a great consolation.

From the experience which I have had I can assure any conscientious practitioner that he need have no fear of the final outcome of a suit defended by our State Society. I am certain I had much better service than any far-away insurance concern could have given.

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Very truly yours.

H. B. CAREY.
Aug. 12, 1911.

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The new addition to the Margaret Fahnestock Training School of the New York Post-Graduate Medical School and Hospital is completed, and provides accommodation for 139 nurses.

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CONSTIPATION.

The general practitioner's attention is directed to the proceedings of the American Proctological Society, reported in this number. The symposium on the ever present problem of constipation has a value to all of us apart from all specialism.

NEW MEMBERS.

Lord, F. K., Comptonville.
Williamson, J. M., San Francisco.
Woodward, A. P., San Francisco.
White, J. L., Sacramento.
Moore, J. A., Dinuba, Cal.
Gallion, T. W., Davisville.
Nutting, C. W., Etna Mills.

DEATHS.

Foster, H. Jefferson, Cucumonga.
Phelan, Gregory; died in Beguin.
Stanley, H. B., Tuolumne, Cal.
Pillsbury, E. S., Los Angeles.

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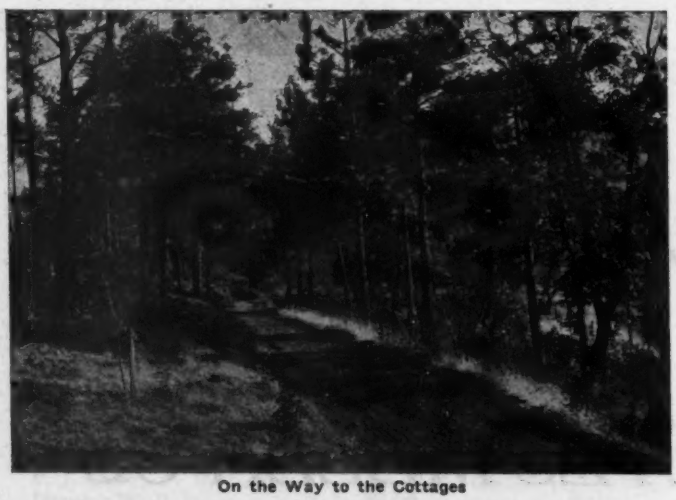

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